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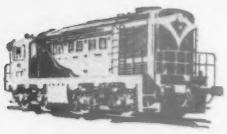

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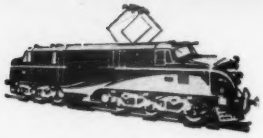

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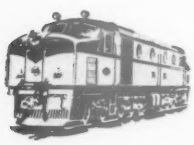

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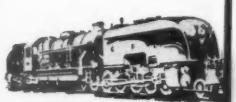

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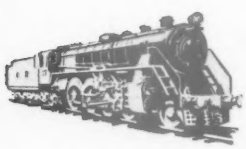

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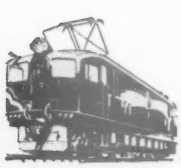

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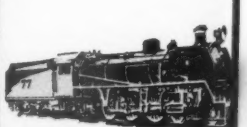

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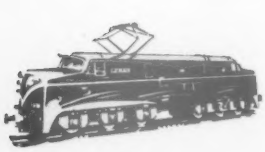

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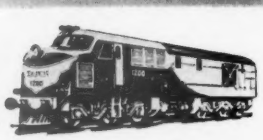

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CONTENTS

Rising Exports

THE growth of world trade in manufactured goods, and the part played by British exporters in the general increase, is shown by provisional figures issued by the Board of Trade last week. The United Kingdom increased the value of its exports from 1955 to 1956 by 9·8 per cent, retaining 19 per cent of world trade—a slightly smaller share than the 19·7 per cent achieved in 1955. The British record, at first glance, compared badly with that of two countries which are strong competitors in the field of railway equipment, Japan and Germany, but these countries are still rebuilding their economies. The increase in Japanese exports was 25·3 per cent and that of Germany 20·4 per cent. On the other hand, the value of British locomotive and rolling stock exports rose from some £40,000,000 in 1955 to £45,000,000 last year. The world market for railway material is likely to increase greatly in the next few years. It is to be hoped that the African and Asian territories in the British Commonwealth that have recently achieved, or are in process of achieving, their independence, will, assisted by British capital, develop their resources, which the transformation of the Colonial Development Corporation into a Commonwealth Development Corporation with adequate financial resources, and charging suitably low rates of interest, would go far to achieve. In those countries railways must inevitably have a great part to play, and British manufacturers of railway material, with their long experience of conditions and requirements there, will be able to cater for the inevitable expansion. India, too, offers immense possibilities. Another export market with great possibilities is Spain, where the general industrialisation programme and the expansion of the railways offer opportunities for British manufacturers, particularly as regards electrical equipment. British locomotives already have a reputation in Spain, as evinced by the repeat order for 15 3,600-h.p. 3,000-V. d.c. electric locomotives recently placed by the Spanish National Railways with the English Electric Co. Ltd., but the current drive to improve railway facilities should give opportunities not only to locomotive builders but also to manufacturers of rolling stock and other railway equipment. It is clear, however, that in countries both within and outside the Commonwealth, British manufacturers must be prepared to quote competitive prices and delivery dates, and ensure that the latter are kept.

Incentives for Industry

THE retiring President of the Federation of British Industries, Sir Graham Hayman, last week expressed a regret that many people will share, that nothing had been done by the Government this year to encourage investment by the restoration of investment allowances. The immediate reaction of the Federation to the Budget was a statement that the Chancellor, Mr. Peter Thorneycroft, was taking a considerable risk in delaying the restoration of any stimulus to investment in private industry. As Sir Graham Hayman pointed out, modernisation and re-equipment schemes are likely to be delayed if another year passes before such incentive is restored. The Chancellor himself sees no sign of stagnation in investment, more particularly in the public sector of industry, although he recognises the need for investment allowances in the shipping industry. As he declared in the Budget speech, the plans for transport—in which the modernisation and re-equipment of British Railways have great importance—for atomic energy, steel, and coal, are on a large scale. Investment in these basic industries is vital to the country. In the private sector of industry, the rate of investment has been rising rapidly, but not necessarily evenly. The Chancellor looks forward to an expansion of exports, some increase in consumption, and probably a slight increase in fixed investment in the coming year, but it is evident that private industry has its reservations on this outlook, and would like more positive encouragement.

More Steel for Railway Purposes

THE need of British Railways for new equipment of all kinds carries with it a demand for supplies of steel not only for the railways themselves but also for manufacturers of railway equipment. The rise of 8·7 per cent in the quantity of finished steel made available for railway purposes in January and February this year, as compared with 1956, must therefore be viewed with satisfaction. The shipbuilding industry received an increase of no less than 15·6 per cent. Whether this improvement can be maintained is doubtful. Examination of the figures issued by the Iron & Steel Board shows that the total deliveries from United Kingdom mills increased by only 3·8 per cent, so that the explanation for the substantial increase to certain industries—including railways—seems to lie in the very much reduced demand from the motorcar industry and the closely-allied drop-forging industry. There are signs, however, that demand is reviving and the motorcar manufacturers already have written to the Board of Trade forecasting that the steel mills will not be able to meet the demand from their industry in the third quarter of this year. The steady rise of steelmaking

capacity in Britain should assure that all demands can be met in the reasonably near future, but plate and sheet shortages meanwhile remain a potential brake on production.

Major Improvements in Brazil

THE scope of the expansion and re-equipment of railways in Brazil is shown in three projects affecting the Central Railway, for which the Brazilian Bank for Economic Development has approved a credit of 2,024,858,000 cruzeiros (£11,250,000), in three instalments. The projects, known as Nos. 3, 23, and 41, were formulated by the Brazil-U.S.A. Mixed Commission. Work still to be carried out under Project 3 includes remodelling of 150 miles of line between Rio de Janeiro and Belo Horizonte, and construction of repair shops for diesel locomotives at Horta Florestal. Project 23 provides for complete relaying of the Central Railway suburban lines from the terminus at Rio to Deodoro, completion of the purchase of 200 electric trains from the Metropolitan-Vickers Electrical Co. Ltd. and of 100 trailers now being built locally, and enlargement of Deodoro workshops for electric trains. The third project, No. 41, comprises improvements to metre-gauge lines in Minas Gerais, relaying of lines of high traffic density and strengthening of formation, and purchase of passenger stock and workshop equipment.

B.T.C. Intensifies Training Drive

LAST December this journal drew attention to a scheme devised by the B.T.C. for increasing its technical membership from the fountainhead, that is, direct from the universities. We pointed out then that this promising field was already receiving attention from private industry. Now we hear of new developments arising from this scheme. It is to be hoped that these do not amount to shutting the stable door after the escape of the horse. The new developments include the establishment in the Manpower Adviser's Department at B.T.C. Headquarters of a separate Division under a Director of Training and Education (see also this week's Personal Section). The Director of Training and Education will be responsible to the Manpower Adviser for training and education matters and for the supervision of the Commission's training establishments. He will also be required to play an important part in the general training of potential leaders in the organisation and for ensuring adequate contact with the Universities and Technical Colleges. The principle of encouraging and facilitating technical education and thus fitting greater numbers for promotion is an excellent one which for far too long has been neglected on British railways. The rigidity of the grading system in the past must often have proved an almost insurmountable barrier to ambition and because of it there is no doubt that the full potential of many an individual has failed to mature. The principle of training and promotion from within is one which has been practised with outstanding success for many years in private industry, and it is to be hoped that the B.T.C. will apply it in ever-increasing degree.

The Railway Benevolent Institution

THE oldest in the railway world, we believe, and one of the most remarkable philanthropic bodies of its kind in the sphere of any industry, is the Railway Benevolent Institution. It was established in March, 1858, when a provisional committee of chief officers of the railway companies and the Railway Clearing House formulated a set of rules. In 1865, the scope of the Institution was extended to cover wages grade staff, and arrangements were then made with life assurance companies whereby railwaymen could insure their lives, with premiums deducted weekly through the paybill; the Institution was the pioneer in this respect. In 1881, the Railway Servants' Orphanage at Derby was amalgamated with the Institution and since then has formed part of and been supported by it, as is the Home for Old People at Dorking. Branches were established in Scotland in 1880 and in Ireland in 1891. The Institution has enjoyed Royal Patronage since 1863, and many railway officers have served on its boards of management; the President this year is Lord Rusholme, Member of the British Transport Commission and Chairman of the London Midland Area Board. During its existence the Institution has distributed over £4,500,000 in relief. Apart from 879 grants made last year to meet immediate needs, 2,048 annuitants at present are on its funds.

London Travel Habits

THE "London Travel Survey 1954" issued by London Transport last week is a document of the greatest transport and social interest. Its appearance may be considered belated, but clearly the tabulation of the results of interviews with members of some 5,500 households and the statistical evaluation of the information has been no small task. Basic changes since 1954 in the travel habits of Londoners are likely to have been negligible. The survey shows that 71 per cent of the population of Greater London make some use of public transport during the week, including 52 per cent who use public transport only. Private transport is used by 29 per cent, but more than half of these use public transport also. The proportion of journeys using various forms of transport is complicated by the fact that many people use more than one form. The highest proportions of journeys on weekdays are made on British Railways, London Transport, and by bicycle. The extent of the peak problem on the main-line railways is shown by the fact that of all journeys on British Railways in the Greater London Area, 35 per cent start between 7 and 9 a.m. and 29 per cent between 4 and 6 p.m. This concentration is greater than any experienced with other forms of transport, public or private.

Punch-Card Goods Accounting

AN entirely new system of goods accounting, in which Hollerith punch-card machines are used for the production of a detailed trader's account, has been introduced by the Southern Region of British Railways in the Brighton area, and is the first installation of its kind on British Railways. The system, which is described in detail on another page, has been started with a small volume of work, and during the first phase 2,000 accounting entries are being made daily, with 4,000 traders' accounts produced monthly. The machines can, however, handle a considerably larger volume of work, and they will, within a year, be extended to the limit of their capacity. The Brighton area has the largest concentration of goods traffic in the Southern Region, and for this reason it was chosen as the forerunner of a system that will eventually embrace the whole of that Region with the effect of greatly accelerating and simplifying accounting procedure.

Fresh Approach to Track Recording

THE importance of the permanent way to the safety and smooth running of all railway traffic is given emphasis by the decision to introduce on British Railways a prototype track recording coach, described elsewhere in this issue. Although special railway vehicles equipped with recording gear designed to provide a record automatically of track parameters such as cant, curvature, gauge, or line, have been used in many parts of the world, including this country, no vehicle has yet been produced with apparatus which can provide measurements as accurate as those obtainable by manual methods, based on the use of the spirit level, gauge, and versine measuring equipment, and at the same time do this at speeds which will not unduly interfere with normal traffic. The need for a vehicle which can make accurate recordings at comparatively high speeds has led British Railways to investigate the problems involved, with particular reference to curvature and cant, and a coach has been built, incorporating gyroscopic methods found in guided weapon control design.

Increased Motive Power in South Africa

A SUBSTANTIAL addition to the motive power on the 3-ft. 6-in. gauge of the South African Railways has been made by the completion of the 35 "GMAM" class locomotives by Beyer, Peacock & Co. Ltd. Articulated locomotives are not by any means new to the railways, as the first Beyer-Garratts were delivered more than 30 years ago. The present locomotives, which have a tractive effort of 68,800 lb. at 85 per cent boiler pressure, have been evolved from the "GM" class delivered in 1938, a description of which was given in our December 9, 1938, issue; these were the first Beyer-Garratts to employ the use of an auxiliary water tank, a feature of the "GMAM" class engines; the water tank is on the front unit, and will be used only when the locomotive is detached for shunting purposes. It is the policy of the administration to retire older locomotives for economic reasons, and some 16 have been condemned recently. The latest delivery therefore will be particularly welcome, in view of the continued increase in traffic on the railways.

Higher Costs and Fares

THE application for higher fares, in the form of a new draft passenger charges scheme, submitted to the Transport Tribunal by the British Transport Commission last week was inevitable once the recent agreement between the Commission and the railway trade unions to raise railway wages by 5 per cent had been made. Even before that, rising costs of materials had made it only a matter of time before fares were increased. If the draft scheme is approved by the Tribunal, the Commission will have powers to make certain fare increases on British Railways and London Transport services, but, except for the raising of the minimum ordinary fare on London Transport services from 2½d. to 3d., the Commission believes that it can postpone the operation of higher fares until the autumn. The 3d. minimum fare is, in practice, already in force, having been introduced, under the authority of the Hydrocarbon Oil Duties (Temporary Increase) Act, 1956, to meet the cost of the temporary increase in duty on fuel. Now that the extra 1s. a gallon duty has been removed, the authority for the ½d. surcharge lapses as from April 23. To avoid reducing fares, only to raise them again later, the Commission applied to the Transport Tribunal, as provided in the Hydrocarbon Act, for an extension of time for this surcharge pending the Tribunal decision on the new passenger charges scheme. The effect, now that this has been granted, is to continue the 3d. fare without a break.

In an explanatory statement, the Commission points out that in June, 1956, it announced that in the general interest it would not increase fares and charges during the remainder of that year. Costs, however, continued to rise and an application would have been made for some increase in fares and charges at the beginning of 1957 had it not been for the increase in revenue accruing to the Commission as a result of better rail loadings during the period of fuel rationing. Both passenger and freight traffics have been running at a higher level during fuel rationing, but it could not be expected that this level would be maintained; and, in fact, it is already falling. The recent wages awards have now to be brought into account as well as the higher costs to be met for coal, electricity, steel and other commodities. The new draft passenger charges scheme has accordingly been submitted to the Transport Tribunal, but any increase in charging powers sanctioned by the Tribunal, as already stated, will not necessarily be followed immediately by an increase in existing fares. The extent to which, and the time at which, increases in fares will be made will be decided in the light of future circumstances, including particularly the extent to which the Commission undertakings are able to retain the additional traffic which they have been carrying in recent weeks.

The 5 per cent increase in wages agreed recently will cost British Railways more than £14,000,000 a year, and there have been other heavy cost increases, particularly in coal prices, since some of the fares were last increased in January, 1956. The total additional cost to British Railways is likely to be more than £20,000,000 a year. Towards these increases in cost, the draft scheme provides, in the London Area, for increases in maximum charging powers broadly similar to those proposed for London Transport. These powers will be used at the same time as the corresponding London Transport fares are increased. For the maximum charges applicable to British Railways outside the London Area the draft scheme provides only for increases corresponding to those in the London Area for early morning return and season ticket maximum scales. As regards British Railways ordinary fares, the draft scheme retains the existing authorised maximum scale of 2d. a mile second class and 3d. a mile first class. This scale is higher than that actually charged, the general level of ordinary fares at present in operation being 1·88d. a mile second class and 2·82d. a mile first class, the level to which they were raised in June, 1955. These fares, which still are less than double prewar fares, are not being increased up to the authorised maxima, at least for the time being.

Recent and pending wage increases will cost London Transport some £2,500,000 a year, and apart from the temporary increases in fuel duty there have been other increases in cost since the last general increase in fares in London in December, 1955, and January, 1956. Those fares increases were not, in fact, sufficient to put the finances of London Transport on a satisfactory basis. London Transport services, in a normal year, must earn an extra £4,500,000. Apart from the increase of the minimum ordinary fare for one mile from 2½d. to 3d., the ordinary fare for two miles is to be raised from 4d. to 5d., the 4d. fare being retained for 1½ miles. Ordinary single fares are to be increased under the scheme by amounts varying from 1d. for nine miles to 5d. for 60 miles and over. Early morning single fares on road services will be increased by 1d. or 2d. and early morning return fares by rail will be increased by 1d. or 2d. up to nine miles; by 3d. from 10 to 27 miles; and then by gradually increasing amounts to 1s. 8d. at 60 miles. Monthly season tickets will be increased by 3s. 9d. for one mile, rising to 9s. for 23 miles and over, with proportionate increases in weekly and longer period tickets. The yield obtainable from the only immediate increase—of the 2½d. fare to 3d.—with any remaining additional revenue resulting from fuel rationing, will be less than sufficient to meet the increases in costs already being borne by London Transport. Sir John Elliot, Chairman of London Transport, last week estimated the yield of the extra ½d. at just under £2,000,000 a year.

Traffic Fluctuations in February

IN the second four-week period of this year, extending from January 28 to February 24, British Railways originated 23,560,000 tons of freight train traffic. That was a record quantity for the time of the year, being 1,837,000 tons, or 8·5 per cent, above 1956 though barely 500,000 tons over the busy year 1953. The chief cause of the increase was a rise of 1,348,000 tons in forwardings of coal and coke. The National Coal Board had in two successive weeks record outputs of coal for any week since the war. The tonnage of railborne coal and coke advanced to 14,748,000—3 per cent more than in 1953. Another record for the February period was set up by mineral traffic which increased by 169,000 tons, or 3·4 per cent, on last year to 5,161,000 tons.

Restricted oil supplies had little to do with these increases in heavy traffics, but, as in January, were instrumental in checking for the time being the persistent downward trend since 1951 in merchandise carryings. These totalled 3,596,000 tons in February, an increase of 295,000 tons on 1956, or 8·9 per cent, but were less than the tonnage handled in every other February since nationalisation. The forecast of traffic receipts for the four weeks to March 24 shows that the diversion of merchandise from road to rail conveyance then slowed

down, while the level of mineral traffic was fairly steady and coal declarations tapered off. On the freight side British Railways stand a poor chance of benefiting permanently from the present transient emergency.

In the February period British Railways worked 1,820,282,000 ton-miles, an advance of 140,711,000, or 8·4 per cent, on 1956. All Regions moved more freight, but the brunt of the additional work fell upon the Eastern Region, which accounted for 35·5 per cent of the extra ton-miles for the whole system, compared with the London Midland share of 22 per cent, the Western 20 per cent, the North Eastern's 10 per cent, and 9 per cent from Scotland. The Eastern's tonnage was 433,000 tons higher (12·2 per cent) and its ton-miles were up 50,043,000 (14·3 per cent). All classes of traffic united to build up the inflated traffic volume, but especially noticeable were increases of nearly 25 per cent in merchandise tonnage and close on 23 per cent in merchandise ton-miles. A commentary on these developments would be instructive.

Passenger Traffic

British Railways established a record for the month of January by carrying 103,726,000 passengers, an increase of 14,180,000, or 15·8 per cent, on 1956. The corresponding receipts rose by £1,775,000, or 20·8 per cent. The number of first class passengers was 2,586,000, an increase of 569,000, or 28·2 per cent, while first class takings rose in proportion by £316,000 to £1,402,000.

Last year nearly 39 per cent of 1,005,345,000 journeys on British Railways originated in the Southern Region, which also accounted for 30 per cent of 289,371,000 journeys made by season ticketholders. In January the Southern originated 43 per cent of all passenger journeys and 58 per cent of the total season ticket travel. On the Southern 51 per cent of its 44,776,000 passengers in January held season tickets; on other Regions the percentage varied from 12 on the North Eastern and 17·6 on the London Midland to 30 per cent on the Western, 32 per cent on the Scottish and 40 per cent on the Eastern. Regular passengers multiply where frequent suburban and outer suburban services are run.

In the four weeks to February 24, London Transport railways carried 45,631,000 passengers, an increase of 1,610,000, or 3·7 per cent; receipts were 11·1 per cent higher. L.T. road services moved 249,146,000 people, 15,534,000 more than last year (6·6 per cent); road receipts were up 17·6 per cent. In the same period Road Passenger Transport, Provincial and Scottish, had 6,130,000 more passengers, an increase of 3·6 per cent. The Tilling Group gained 5,405,000 passengers (4·9 per cent) and the Scottish Group 725,000 (1·2 per cent). Both groups took 22 per cent more money in fares.

Freight Services in the Netherlands

THE progress made by the Netherlands Railways in the replanning of freight services is discussed in the December, 1956, issue of *British Transport Review* by Mr. M. H. Harbinson, Deputy Trains Assistant to Operating Superintendent, Eastern Region, and Mr. S. Millard, Head of Central Timing & Diagramming Section, Liverpool Street, Eastern Region. Messrs. Harbinson and Millard, as representatives of British Railways, spent a week at Utrecht in October, 1955, at the invitation of Dr. F. Q. den Hollander, President of the Netherlands Railways, in studying freight and passenger services and timetables.

The volume of freight and the distances concerned are such that most of the marshalling and train working can be carried out during the night hours, when there is little passenger traffic. Coal traffic, perishables, and some other commodities are an exception to this. Transits of 24 hr. are normal throughout the country now, but ultimately it is hoped to give an overnight service for sundries and full-load traffic between any two points in the Netherlands. Baggage, mails, and parcels post are carried by passenger trains, and ordinary parcels are combined with goods sundries and moved by express freight services. Sundries traffic has been zoned since 1934, with railheads at all main centres of population. Sub-railheads are provided where it is cheaper or more convenient to deal with traffic to or from the zonal railhead by wagon. These sub-railheads normally forward to railheads for transhipment, but a load of 1½ tons or more to any one destination is considered to justify a through wagon. Express freight trains carrying sundries traffic run direct between railhead depots, without entering marshalling yards, but may attach or detach portions at intermediate railheads on the line of route. Speed is essential, because the time taken to bulk and load traffic necessitates late-evening departures and arrivals must be early to allow morning delivery. These trains, therefore, are timed on a limited-load basis at 56 m.p.h. This limitation poses problems when traffic is in excess of booked capacity. Surpluses are reported to the Central Control at Utrecht and arrangements made for the wagons to be trip-worked to the nearest marshalling yard for combination with full-load traffic for the same destination. Alternatively, where the amount of traffic justifies it, special trains are run. Terminal working and cartage are not carried out by the railways, but by the associated firm of Van Gend & Loos.

The cessation of development work during the war gave the opportunity of making a detailed study of traffic working in the last full year of peace, 1938. This was studied day-by-day and wagon-by-wagon. With a margin of 25 per cent for future traffic increases, this study formed the basis of post-war planning. The plan for full-load traffic bears some similarity to the earlier zonal system developed for sundries. All stations dealing with full-load traffic are combined into groups, each group having a modern marshalling yard at its centre. Feeder trips take wagons to the marshalling yards, where they are made up into trains for other marshalling yards from which they are distributed by local services. Where branch lines have been closed, traffic is brought in by road feeder services. Where there is insufficient traffic for a train to a single yard, trains are made up for two or more yards. Ultimately the booked service should consist of 54 per cent of trains running direct from originating to destination yard, 31 per cent making one intermediate stop, 13·5 per cent making two stops, and 1·5 per cent making four stops. The plan is in partial operation with 32 groups covering the country, but when new marshalling yards have been completed there will be only 10 groups. The normal timetable of working is for loaded local feeder services to leave between 6 and 7 p.m. to arrive in group marshalling yards not later than 9 p.m.

The main services leave the yards from midnight on, and as the journeys take only 2—3 hr. the wagons have arrived at destination yards and been sorted for local despatch by about 5 a.m. Ordinary full-load freight trains are timed at 60 k.p.h. (37½ m.p.h.), with a load of 41 wagons. The critical factor, however, is the time spent in passing through the group marshalling yards. Standard times have been adopted, allowing 20 min. for uncoupling and preparing cut-cards, 15 min. for shunting a 60-wagon train, and 15 min. for coupling-up and creating brake pressure. As the usual train is of 41 wagons, as stated, this yard timing allows a certain recovery margin. Preference has been given to building new marshalling yards rather than altering old ones, and the standard design is a double-ended single yard with one hump carrying two tracks. The yard has reception roads in tandem to cope with traffic in both directions. The yard can be used as a whole, or, if two trains are pushed over the hump together, half can be allotted to each train. As there is little waiting for onward services, departure roads are not necessary.

Coal and oil traffics are dealt with separately as block loads and do not enter the general pattern of freight traffic. The success of the freight reorganisation is shown by the regularity and punctuality of the services, 80—90 per cent of express freight trains and 70—80 per cent of ordinary full-load trains arriving on time or within 10 min. of booked time. While admitting the effect of economic and geographical conditions peculiar to the Netherlands,

the authors claim that much of the success achieved stems from the use of electric and diesel locomotives with fully-braked trains. As they point out, similar tools will be available in Britain in a few years, and detailed planning for their best use should be, and doubtless is, in progress now.

Indian Railways Budget, 1957-58

THE Indian Railways budget for 1957-58 was recently presented to Parliament, as recorded in our March 29 issue, by the Minister for Transport & Railways, Mr. Jagjivan Ram, in a White Paper. The main features of the budget are higher gross traffic receipts, higher working expenses, a higher dividend contribution to general revenues and a lower net surplus. In 1955-56, for which actual figures are available, net surplus was Rs. 142,200,000. The net surplus in 1956-57, according to the revised estimates, should be Rs. 269,500,000, while in the next year, it is expected to be Rs. 214,300,000, all of which is proposed to be credited to the Development Fund.

The Minister, in his speech introducing the budget, mentioned with satisfaction the increase in the railways operational efficiency and use of rolling stock, particularly wagons. Last year the total tonnage handled by the railways increased by 10 per cent and net ton-miles per wagon per day on broad gauge reached the record figure of 514—never before attained in India. He also underlined the importance he attached to the rehabilitation of the old railway track and bridges and to the construction of new ones. In this connection he made a special mention of a committee of engineers appointed last year. In view of some recent rail disasters due to bridge collapses, importance attaches to the work of this committee, as it has been asked to prescribe appropriate designs and formulate specifications for waterways and to give instructions for the proper upkeep of bridge structures and protection works.

The gross traffic receipts in 1957-58 will be Rs. 3,685,000,000, as against Rs. 3,500,000,000 last year, on the basis of the present level of fares and freights. The higher income will be due to an anticipated increase of 3 per cent in passenger traffic and 5 per cent in goods traffic.

The White Paper places the estimate of goods earnings for the budget year at Rs. 2,180,000,000, compared to the current year's revised estimate of Rs. 2,065,000,000. The sum of Rs. 2,180,000,000 is inclusive of the supplementary charge of 6¼ per cent, which is proposed to be continued until a selective variation of charges is made on the basis of the recommendations of the Freight Structure Inquiry Committee, set up in 1955. The committee report is expected to be received shortly and as their recommendations are likely to be considered and implemented in the course of the budget year, the consequential changes in the freight rates of various commodities would naturally modify the estimate mentioned above.

The estimate of passenger earnings for 1957-58 has been placed at Rs. 1,190,000,000. The rise in passenger traffic, says the White Paper, has been fairly steady during the current year. There was an increase under passenger earnings from the budget estimate of Rs. 1,114,000,000 to Rs. 1,155,000,000 under the revised estimate. Goods earnings have kept pace with the budget anticipation of an 8 per cent increase in traffic over last year. The working expenses will increase by Rs. 148,200,000 over last year's figure of Rs. 2,689,800,000, primarily because of the increase in passenger services, repairs to a larger holding of rolling stock and additional expenditure on staff. The revised estimate of total gross traffic receipts for 1956-57 is placed at Rs. 3,500,000,000, an increase of Rs. 50,000,000 over the budget estimate, the increase being mainly under passenger earnings.

Against the budget estimate of Rs. 2,620,500,000 for ordinary working expenses during 1956-57, the revised estimate comes to Rs. 2,689,800,000. The increase has taken place on account of increased charges under administration, repairs and maintenance, higher fuel bill mainly on account of enhancement of coal prices from July, 1956. The net railway revenue in 1956-57 is estimated at Rs. 646,400,000, out of which dividend to general revenues accounts for Rs. 376,900,000, leaving a net surplus of Rs. 269,500,000. The entire surplus is being credited to the Development Fund. The estimate of dividend to general revenues in 1957-58 is placed at Rs. 437,900,000.

Reference is made in the White Paper to shortages of steel and cement, and of permanent way material, which are stated to be delaying the implementation of the betterment programme for the current year.

Radio and Television on Railways

AN interesting presentation of some of the ways in which certain recent applications of science to industrial purposes might be turned to good account to increase the efficiency and safety of railway operation was provided by the joint lecture given before the Institution of Railway Signal Engineers on February 19 by Brigadier E. J. H. Moppett and Mr. I. Waters, dealing with radio and television equipment. Radio devices have, of course, already been used with success in varying forms on several railways, more particularly in America, and television also is attracting attention, as being likely to enable certain operating problems to be solved more readily than at present. Both speakers adopted, as we think, the correct attitude of disavowing, at the outset, any suggestion that the equipment, the working of which they so informatively demonstrated, was capable of replacing existing systems of signalling, and then proceeding to explain in what manner they considered it could serve as a useful adjunct to them under certain defined conditions.

The advantages of radio communication with locomotives and ground staff in shunting and marshalling yards and with men engaged in engineering and maintenance work on the line are now admitted, very beneficial results having been obtained with it, and communication between a controller's office, a station, or a signal box and trains in motion also has been resorted to with success. This is especially the case in America where traffic operating methods are particularly favourable to something of this kind, since on a great deal of the mileage the dispatching system requires that orders shall be given to trains when it becomes necessary to re-arrange the running and depart from the timetable precedence. An accurate knowledge of a train's whereabouts is often of great value in coming to a decision under this system and radio communication provides a ready means of obtaining it. It is interesting to note that the desirability of endeavouring to apply something of this kind was debated as far back as 1892 before the International Railway Congress at St. Petersburg, when the English reporter, the locomotive engineer Pollitt, of the old M.S.L.R., later Great Central Railway, gave details of the continuous inductive system introduced in the 1880s by Edison in association with a well-known American telegraph engineer of the day named Phelps. Communication was exchanged by Morse signals between the stations and the guards on the trains, and the equipment gave what were said to be very satisfactory results on at least two railways, even functioning when a storm had brought down the pole line and the inductive transmission wire, which was of steel, was lying buried in snow. The arrangement was esteemed to be very valuable in the case of breakdowns or for keeping in touch with work or ballast trains. Whether it received any extended application does not appear, but it was only to be expected that when true radio communication, in the sense here being spoken of, became available it should meet with a good reception in the U.S.A. The very long trains so frequently run there and the fact that, under the dispatching system, guard and driver often require to confer, offered another field for radio working and communication along individual trains soon found extended application. Some European countries also have applied these devices to a limited extent and the subject has been

discussed more than once before the Railway Congress and, we believe, at meetings of the U.I.C. That such equipment has been brought to a high level of efficiency, reflecting much credit on its designers, will not be disputed but whether any large-scale adoption of it on lines in this country would be, in present circumstances at any rate, a justifiable expenditure of money and bring proportionate benefits may perhaps be a subject for discussion. Undoubtedly there are at times occasions when ability to communicate with the crew of a train in motion would be of advantage, even very great advantage, and it is not difficult to think of certain accidents which possibly might have been avoided by such a facility. There are, however, other things which might be held to give for the same investment a greater all-round increase of the safety factor and it becomes simply a question of utilising available resources to the best advantage. It would nevertheless be of very great interest to make some trials with radio train communication under British operating conditions, for no scientific development should be neglected in the endeavour to obtain the maximum efficiency in the operation of our traffic and if, in so doing, we can remove still further potential causes of accident, so much the better. It has to be remembered, however, that we have already a very great amount of equipment, the sole purpose of which is to handle traffic expeditiously with every reasonable safety precaution, all needing to be maintained constantly in proper order, itself quite a heavy burden, and that anything additional would require to be dealt with similarly. That television can, under certain circumstances, offer real advantages to the railways, to extend, say, the eye of a signalman or controller, is doubtless correct and certainly the arguments for this presented in the lecture were ably thought out and as interestingly presented.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

The Fuel Oil Tax

April 10

SIR,—The leader "Tax Threat to Dieselisation," in your April 5 issue, in presenting the case against the extension of oil taxation to the railways, might also have stressed the fact that the railways, unlike road transport, must themselves provide and fully maintain their tracks. Road transport, in compensation for special taxation, enjoys the free use of some 190,000 miles of roads. Railway track costs, when compared with taxation borne by public road operators per passenger or ton mile, certainly do not show the railways to have an advantage in this respect. It is worth noting, too, that up to he time of the emergency increase in fuel tax, road transport had for nearly five years enjoyed an unchanged rate of 2s. 6d. a gallon, despite a fall in the value of money, which would be offset by an increase to 3s. a gallon today.

Despite massive investment in oil refineries in this country, both petrol and diesel fuel must still be imported, the amount of petrol imported being far in excess of diesel fuel. Thus restrictions on the use of diesel fuel would not serve any useful purpose if petrol imports were thereby increased.

Yours faithfully,

J. H. BREBNER
Public Relations Adviser

British Transport Commission,
222, Marylebone Road, N.W.1

Unhappy Travel Experiences

April 6

SIR,—The two following railway experiences are perhaps of some interest in relation to the present situation in this country.

On a recent Friday, the daily through Birkenhead-Bournemouth train left Leamington 21 min. late and Banbury 25 min. late. The station time at Oxford was exceeded by 3 min. although the starting signal was at clear and platform activity had ceased some time before departure. The Southern Region "King Arthur" that replaced the Western "County" at Oxford did not touch 60 m.p.h. on the way to Reading West, which was left 32 min. late. From Basingstoke, where the station time was exceeded by 3 min., we ran gently to Southampton Central with an intermediate 2-min. stop at Winchester, arriving at 4.51 instead of 4.12, having accomplished the distance of 117 miles from Leamington in 3 hr. 10 min. at an average speed of 37 m.p.h. The load was about 300 tons, plus 40 as far as Oxford. Knowing my way about, I left the train at Southampton and waited for the 3.20 ex Waterloo which, overtaking the dilatory Birkenhead train at Brockenhurst, got me to Poole punctually after all. Those similarly or more remotely destined who did not know of this possibility would suffer a delay of at least an hour—and nobody told us of the way out.

To while away the time I went to the restaurant car at 3 p.m., the time announced by the steward for the first service of tea. The car was empty save for three of the staff who were seated at a table in what seemed to be undergarments due for Monday's wash, in keeping with the stained tablecloths. Tea was served about 3.30.

I would not say the foregoing was typical of cross-country trains, but it was by no means extraordinary, and was not the sort of experience one would like to suffer again. The journey by road could be made comfortably in four hours were petrol available, as it probably will be again before long.

The second experience was in France and is relevant to electrification. From Le Mans to Chartres is 76½ miles. A multiple-unit electric train booked to do the run, including 16 intermediate stops, in 92 mins., did it, running as smoothly as any locomotive-hauled train. It is barely 3 miles more from Waterloo to Southampton, yet the Royal Wessex, with only one stop, takes 93 mins. The 9.54 a.m. from Waterloo, with 13 stops, takes 2 hr. 46 min.

Yours faithfully,

W. A. WILLOX

Edstone, Wootton Wawen, Warwickshire

Locomotives or Multiple-Unit Sets?

April 5

SIR,—Mr. T. R. Hume, in today's issue of your journal, asks for proof which I, not being a railway engineer, cannot give. However, any regular traveller can feel and hear how rapidly the riding qualities of a motor coach deteriorate after an overhaul, and several articles published in *The Railway Gazette* and in *Diesel Railway Traction* during the past two years indicate that the forces generated between tyre and rail are alarmingly high whenever a bogie starts to misbehave. The crashing and banging of metal against metal which undoubtedly occurs is certainly damaging something, apart from the unfortunate passengers.

Also, there are lines, such as that between Chelmsford and Shenfield, where electrification has not significantly increased the total number of trains, and where steam trains still run, so some data ought to be available.

Finally, can Mr. Hume give us an example of a "modern coach with only two much lighter motors, albeit still axle hung," and how such vehicles can fit into a 25-kV. a.c. traction scheme in an economic manner?

Yours faithfully,

JOHN RODGERS

132, Worrin Road, Shenfield, Essex

THE SCRAP HEAP

Paris Métro Model as Present

Among the gifts from the City of Paris presented to the Queen last week was a model of the Paris Métropolitain, for the Duke of Cornwall. This consists of a length of track with a section of tunnel with replicas of two stations, Hôtel de Ville and Georges V, and two cars fitted with automatic doors.

Nellie II

Nellie is rising again. The creator, managing director and engineer-in-chief of the Far Tottering & Oyster Creek Railway, Rowland Emett, is hard at work on her. The first rickety, long-funnelled *Nellie*, pulling skinny carriages, hauled thousands of passengers along tracks in the Festival Gardens in 1951. . . . The second one is being built at the forge near Plumpton racecourse, overlooking a stretch of the Sussex Downs. Here, with his blacksmith-partner in Fluffy Mechanisms Limited, Emett dreams up most of his contraptions. *Nellie II*, not as large as the Festival engine, but a sizeable 16 ft. long, will be exhibited in stores up and down the country, starting in Glasgow. —*From the "News Chronicle."*

One for the Pot

Without publicity — almost slyly— British Railways have made a momentous advance in catering. I discovered it (writes "J.H.") on the sunken little station at Lewes, in Sussex. Tea there and at, I am told, an "experimental group" of other stations mainly on the Southern Region is now served in small one-cup pots prepared individually. A ladleful of milk is supplied and the tea is pushed across the counter on a small tray.

To cap all, the coffee at the same tea-rooms is now made in small glass percolators. Railway modesty extends even to the price, which has not gone up. At the main-line termini, however, the urn and the caustic brew still reign. No one knows how to make a small pot of tea quickly enough.—*From "The Manchester Guardian."*

Bees in the Booking-Office

Whether they were potential train travellers or not we do not know, but the fact remains that a swarm of bees recently made themselves at home in the Woodstock railway station. After inspecting the offices, concourses and subways they decided that the booking office was just the place they needed and promptly proceeded to make themselves at home. Clerk B....., however, viewed the invasion otherwise and after capturing the queen-bee was followed by the invaders in a general exodus to a more suitable place.—*From the "South African Railway & Harbours Magazine."*

How the Italians Do It

". . . we had to catch an early morning train. We were lucky enough to meet up with an Italian girl who knew the ropes. When the Rome express came in she hopped on, and stayed on as it went out again. When it was shunted back on to the Venice portion there she was with a couple of seats saved for us in the face of the marauding horde which promptly assaulted it. At a halt she bought me a wonderful Italian train picnic basket, which we thought an excellent national custom as it contained a plate of macaroni with meat sauce (hot), a plate with three pieces of veal, spinach, and roast potatoes (also hot), some cheese, two rolls, an orange and a small bottle of Chianti! All for 750 lire—about 8s. 6d.! I think it was the best meal I had in Italy!" — *Extract from letter written by an English lady touring abroad.*

Signal Success

(Installation of colour-light)

Fare you well, old semaphore,
Pleasant link with years of yore,
For your days of domination of the tracks
And your long and honoured reign
O'er the kingdom of the train
Have been earmarked for an early dose of "axe."

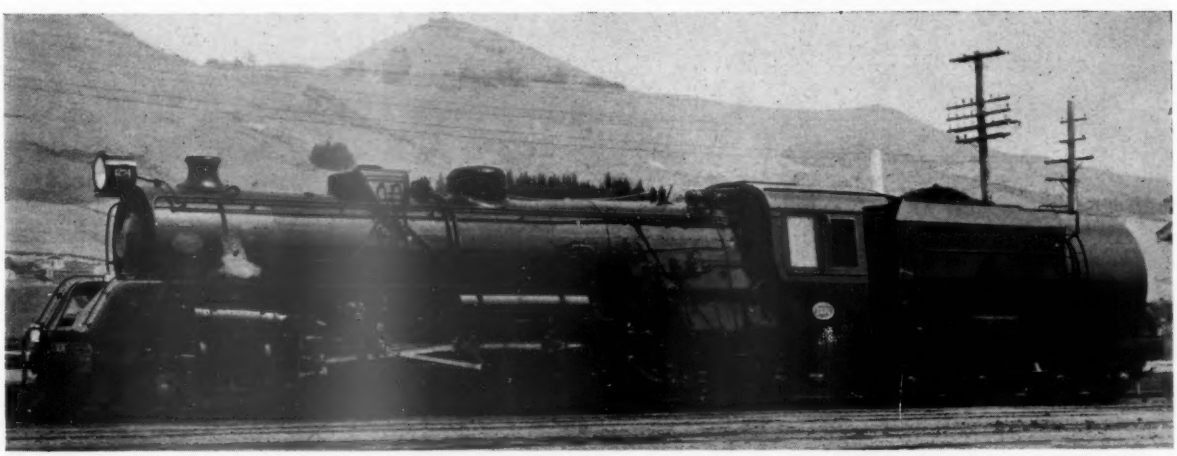
Though your sturdy, outstretched arm
Shelters travellers from harm
Till it's safe for them once more to go ahead,
Now a set of ohms and amps,
With a lot of blinking lamps,
Are taking over, with their amber, green, and red.

Cautionarily consistent,
If at times a little distant,
You have been a most persistent sort of warner
And a visual recollection
Of the need for circumspection
Against perils that may lurk around the corner.

Fickle fortune smiles and frowns,
Quadrants have their ups and downs,
Though your day is done, there's no need to repine;
You can join your old friend Steam
And the rest of us, and dream
Of the days when *we* were "lights along the line."

A. B.

Last Steam Locomotive for New Zealand Government Railways



The last steam locomotive to be built for the New Zealand Government Railways, one of the "Ja" class, designed for main-line service in the South Island (*See page* 184 *of our February* 15 *issue*)

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

EAST AFRICA

Leyland Buses for Tanganyika

Leyland buses designed for carriage of both goods and passengers have recently been introduced in Tanganyika by East African Railways & Harbours. Based on the Albion Reiver six-wheel diesel-engine chassis, the vehicles can carry 11 seated passengers in the bus-type compartment at the front, the rear compartment being fully enclosed as a van to carry 5½ tons. A sizeable luggage rack is also mounted on the roof, with an access ladder built in to the side of the vehicle. Three of these dual-purpose vehicles are already in service and others are on order.

RHODESIA

Bulawayo-Lourenco Marques Service

Rhodesia Railways, in conjunction with the Mozambique Railways are to substitute a twice-weekly mixed passenger train service for the present once-weekly passenger train between Bulawayo and Lourenço Marques next month.

The present train has not been well patronised, and it has been represented to the railways that this is due to the infrequency of the service which does not allow passengers a two to three day visit to Lourenço Marques, and which is awkward for boat connections. The new service will largely overcome these disadvantages with only a small increase in time in the one direction and with a very negligible effect on the movement of goods traffic. The demand on coaching stock will be reduced as it will be possible to put fewer coaches to greater use.

With effect from May 21, trains will depart from Bulawayo at 5 p.m. on Tuesdays and Fridays and arrive at Lourenço Marques at 8.30 p.m. on Wednesdays and Saturdays. In the opposite direction, trains will leave Lourenço Marques at 7 a.m. on Thursdays and Sundays and reach Bulawayo at 10.45 a.m. on Fridays and Mondays. Because of the difference between the timings for mail and mixed trains, the journey to Lourenço Marques will take an hour longer. On the other hand, it has been possible to improve the journey from Lourenço Marques to Bulawayo by 15 min. Each train will have a restaurant car and there will be accommodation for first and second class passengers. Limited accommodation will be available for third class travellers. One of the first class coaches will be air-conditioned.

INDIA

Wagon Stealing

A report mentions that for the last three years, "an organised gang of miscreants has been plying its trade in a particular crime-craft—the fraudulent diversion of railway wagons."

The *modus operandi* of the gang, it is stated, is to change the card labels of the wagons in the yard with or without the connivance of the railway staff. In some cases they change the wagon number either by obliterating or by adding digits, so effecting wrong recordings in wagon books, thereby diverting the wagons to destinations according to their choice. From there, they effect delivery of consignments from the misdirected wagons with the help of forged documents.

In 1954, nine such cases of fraudulent diversion of wagons came to official notice. Out of these cases, the culprits succeeded in effecting delivery in respect of four wagons. This put the railway administration on its guard. A drive was started by initiating various preventive measures. In 1955, 17 attempts were made to divert wagons, but all were detected in time. Last year, the position improved.

UNITED STATES

Safety Clothing for Yard Staff

Tests have recently been carried out by the Safety Department of the New York Central System with reflectorised clothing. Reflectorised road traffic signs have long been commonplace in many countries, particularly in the U.S.A.; the principle as applied to clothing is the basis of the trials made, in a New York City freight yard, and is later to be followed in other yards. Working overalls, as used by American yard operating staff, have been fitted with Flectron, a reflective yarn coated with minute glass beads woven into a vertical stripe. Although indistinguishable in daylight from ordinary garments, at night the stripes appear luminescent at a distance of up to 600 ft. when caught in a beam of light, as from a locomotive headlamp.

Railway Interests in Coal Shipment

Two railroad companies, in partnership with the United Mine Workers of America and leading coal producers have agreed on the formation of a new corporation, American Coal Shippers Inc., to buy ships for carrying U.S.A. coal overseas. The principal object is to increase the export of coal to Western Europe, and so, by expanding American coal exports, to offset any ill effects to their respective interests from a reduction in the internal coal demand as a result of the industrial use of atomic energy.

The two railways concerned are the Chesapeake & Ohio and the Norfolk & Western. The railways, the union, and the coal producers group are each taking up $16.700,000 worth of shares in American Coal Shipping. The directors will include Mr. John L. Lewis, the U.M.W. leader, and Messrs. Walter J. Tuohy and R. H. Smith, Presidents respectively of the Chesapeake & Ohio and Norfolk & Western.

With an estimated steel production of 24 million tons in 1956 and 30 million tons for 1960, Western Germany is seen as the principal customer for American coal, with Holland running as

Express Passenger Working in Malaya

Mail train leaving Kuala Lumpur for Prai (Penang); the engine is a "56·4" class Pacific built by the North British Locomotive Co. Ltd.

second. German coal, according to Mr. Tuohy, costs $16 a ton delivered to the customer as against $22 for American coal delivered to a North European port. The American cost is made up of $7 a ton at the mine, $4 for internal rail transport, and $11 for ocean carriage. Many ships used to carry American coal today are old and have capacities of about 10,000 tons only. American Coal Shipping hopes to reduce charges by the use of larger, faster ships and by mechanical handling facilities at the U.S.A. and European ports.

ITALY

Modernisation of Centovalli Railway

The Italian and Swiss Governments are reported to have signed an agreement on modernisation of the electrified Domodossola-Locarno line at the Italo-Swiss border. Both Governments will grant loans. The stretch to be modernised covers about 20 miles between Domodossola, in Italy, and Camedo, the Swiss frontier station.

FRANCE

S.N.C.F. Deficit for 1956

It is estimated that the S.N.C.F. will show an official operating deficit for 1956 of nearly 82,000,000,000 francs in comparison with a deficit on the same account in 1955 of just under 57,000,000,000. In addition, other payments (net) to the S.N.C.F. by the State covering permanent-way maintenance, level-crossing maintenance, and pension contributions totalled some 98,000,000,000 francs compared with approximately 94,000,000,000 in the previous year. Estimates for 1957 envisage an official deficit on operating account of 46,000,000,000 francs with other payments by the State totalling nearly 127,000,000,000.

Library Van for South East Region

The South Eastern Region of the S.N.C.F. has put into service, on an experimental basis, a library van, which will serve 26 localities not sufficiently important to justify permanent library facilities. It has been stocked with some 7,000 books, which can be borrowed by railway employees and their families.

DENMARK

More Diesel Shunters

The State Railways have ordered 20 new 160-h.p. diesel shunting tractors of the same type as the 26 acquired in 1950-53. The gear is Krupp-Ardelt and all other parts will be delivered by Frichs, of Aarhus.

New Running Shed at Fredericia

The earlier engine shed in Fredericia was built of wood about 1935. The wood, however, deteriorated as a result of contact with locomotive smoke and steam. A new building has been erected, the work being carried out in a remarkably short time. Demolition of the old shed started in July, 1956, and on December 11 the new shed was taken into use. It can hold 12 large steam locomotives and six diesel motor cars. The shed is built of reinforced concrete. For beams and other members pre-stressed and pre-fabricated concrete elements were used.

Automatic Level Crossing Barriers

On the main railway lines most of the level crossings have been replaced by bridges, carrying the road over or under the railway. On the less important railways and all the private railways, where the maximum speed is limited to 47 m.p.h., many level crossings have been equipped with electric light warning signals on the roads and a control light against the trains. In late years automatic barriers, covering only the right half of the road, have been installed.

The remaining level crossings on the main lines are all equipped with manually operated barriers. A law has now been passed, allowing these manually operated barriers to be replaced by automatically operated barriers, covering the full width of the road. These barriers are combined with intermittent light signals against the traffic on road and rail and also with alarm signals.

The cost of installation of a set of barriers will be recovered in a few years by the saving in manpower. The new system is also considered safer than the old.

A set of barriers consists of four barriers, two on each side of the railway, and each barrier covering half the road. To prevent people or vehicles being caught between the barriers, the lowering of these is arranged so that the two half-barriers, covering the right half of the road, are lowered first, and the two other half-barriers a little later.

Publications Received

L'Année Ferroviaire, 1957. Paris 6e.: Librairie Plon, 8, Rue Garancière. 9 in. by 5¾ in. 236 pp. Illustrated with maps, plates, and diagrams. No price stated. —This, the 11th of these annuals, is divided as usual into two parts, the first consisting of articles of a general nature, and the second of a statistical review of the French National Railways in 1956, and of some of the world's principal railways in 1955, with chapters on S.N.C.F. developments in the various technical and other departments during the past year. Contributors to Part I include Monsieur R. Dugas, Directeur des Etudes Générales de la S.N.C.F., who outlines the system's 1957-61 five-year modernisation and re-equipment plan. Monsieur P. Mayeux, Managing Director of the Imprimerie Chaix, relates in a lucid and entertaining manner the history of the *Indicateur Chaix*, and describes problems of its production and sale; his article is illustrated with some striking plates. Monsieur Georges Serrell, Directeur Général de l'Office Français de Relations Publiques, discusses the whole question of public relations. The well-presented descriptive matter in Part II includes the Alsthom 1,800-h.p. diesel-electric Co-Co locomotives described in our March 22 issue; rather more space has been devoted, this year, to electric traction and other technical developments in foreign countries.

Metal Cutting Oils.—The growing use of special tool steels and advances in machining methods make the selection of correct cutting oils increasingly important. A booklet entitled "Metal Cutting Oils" has been published by Edgar Vaughan & Co. Ltd., of Legge Street, Birmingham. In it the different cutting oils are recommended for particular operations such as broaching, machining, and grounding. Typical grades and their application are given in table form, with the type of equipment and the procedure to be followed in the recovery and reconditioning of neat oils.

It happens in Great Britain and in Ireland Day by Day.—The first issue of this publication covers events from May to October this year. The main part of the book consists of comprehensive lists of events with information on how to reach them. Each monthly section is preceded by a short list of "highlights" of the month printed on coloured paper to enable them to be found easily. Most of the travel directions are concerned with rail journeys and distances are given from main terminal stations in London. The publishers are Westprint (London) Limited, 6, Terrace Walk, Bath, Somerset, and the price is 7s. 6d.

Swedish Lloyd Summer Services.—A well-produced folder gives full details of the Swedish Lloyd services between Tilbury and Gothenburg during the 1957 summer season (April to September). Ship plans are included, also train arrangements between St. Pancras and Tilbury and between Gothenburg and Stockholm. The London agents are the British & Northern Shipping Agency Limited, Marlow House, Lloyd's Avenue, E.C.3 (tel. Royal 3161).

Holidays on the Continent.—A series of booklets has been issued jointly by Thos. Cook & Son Ltd. and Dean & Dawson Limited for the 1957 season giving details of a variety of holidays in various European countries. All are produced to the high standards of the travel literature issued by these firms, and contain many well-chosen half-tone illustrations and some useful maps, besides much practical travel information.

Flower Traffic from the Scilly Isles

Semi-mobile caged stillages to avoid handling

En route from St. Mary's to Penzance: stillages in the hold of ss. "Scillonian"

THE Western Region of British Railways has devised a new method of carrying flowers from Scilly.

Since January, experiments have been made in conveying boxes of flowers from St. Mary's to London via Penzance in semi-mobile caged stillages. Boxes are loaded at St. Mary's, Scilly, and conveyed without individual handling to destination station.

This method eliminates six handlings up to the arrival of the boxes at Paddington: (*a*) At St. Mary's: (1) from quay to ship's hold; (2) from ship's hold to stowage point; and (*b*) at Penzance: (3) from stack in ship's hold to unloading tray; (4) from unloading tray to road vehicle at quayside; (5) from lorry to platform; and (6) from platform to railway van.

The stillages are 5 ft. 9 in. long, 3 ft. 8 in. wide, and 5 ft. 10 in. high, constructed of steel, with seating plates for stacking in the hold of the steamer and lugs for lifting by ship's derrick. Each will hold 60 boxes of flowers and seven can be loaded on to a drop-frame trailer, while 15 will go in a "Siphon G" parcels van. The stillages were built by W. C. Youngman Limited, of Crawley, Sussex.

The flower season varies according to weather, but the shipment of blooms generally commences sometime in December, building to a peak in March and thereafter falling away. Very heavy shipments are before Easter and Mothering Sunday.

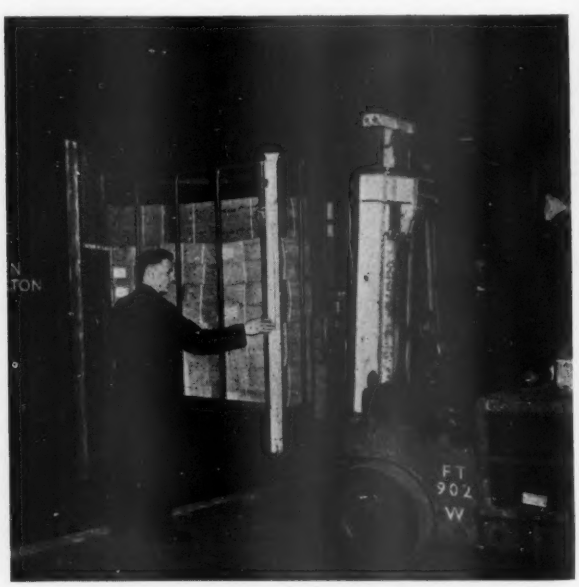
In 1956 over 220,000 boxes of flowers were shipped from St. Mary's to Penzance. This is 70,000,000 blooms, and the charge made for transporting them from the Isles of Scilly to Covent Garden (36 miles by sea from Isles of Scilly to Penzance; 305¼ miles from Penzance to Paddington) is about one penny for 12 blooms. About 75 per cent of the flowers go to the London markets, but a considerable quantity go to the Midlands, the North, and South Wales.

Steamer and Train Services

During the peak flower season, the Scilly Steamship Company adjusts the sailings of the ss. *Scillonian* from St. Mary's to ensure connection of the traffic at Penzance.

Special arrangements are made to carry the flowers in trains from Penzance to London which will reach Paddington at various times up to 2 a.m., and staff are booked on duty and cartage arranged so that deliveries can continue without a break.

At Penzance: unloading stillages from road vehicle which has conveyed them from quayside



At Paddington: removal from "Siphon G" parcels van. Note restricted clearance through door

Mechanised Goods Accounting at Brighton

Punch-card machines produce traders' accounts; first installation on British Railways

AS part of the modernisation plan for British Railways, an entirely new principle of goods accounting has been introduced in the Brighton area. The system is an electrical process by which punch-card machines are used for the first time on British Railways to produce detailed accounts for issue to traders.

The change-over from the old system to the new is being made by starting with a small volume of work from a number of nearby stations, then building up in phases until the machines work to the limit of their capacity covering a wide area. The effect of the new system will be to produce greater efficiency, and it is intended within a year to extend it over a roughly triangular area, the furthest points of which are Croydon, Chichester and Hastings.

Abolition of Invoicing

The possibility of concentrating accounting on a large scale to permit of the use of modern mechanical aids was seen some four to five years ago, as a natural sequel to the abolition of invoicing, but it was felt that minor concentrations then planned under zonal arrangements, should be allowed to become established, as a result of which the major concentration could be brought about with less difficulty.

Eventually it was decided that all accountancy processes up to the production of the monthly balance should be mechanised. Investigations commenced in March, 1956, and attention first centred on the type of account to be rendered to traders. Up to that time, experience suggested that the greatest advantage from mechanisation could only be expected if traders' accounts were produced in skeleton form and if the original consignment note tendered by the sender was returned with the account after the note had been endorsed with the carriage charges. This system, in use at certain points in other regions of British Railways, had two major disadvantages in that traders would be unable to connect a charge on their account without reference to the particular consignment note which would be returned with others to them in parcels, and the necessity of making a microfilm copy of the consignment note before it was returned: an expensive process which later would give rise to difficulties if a query arose.

Traders' Accounts

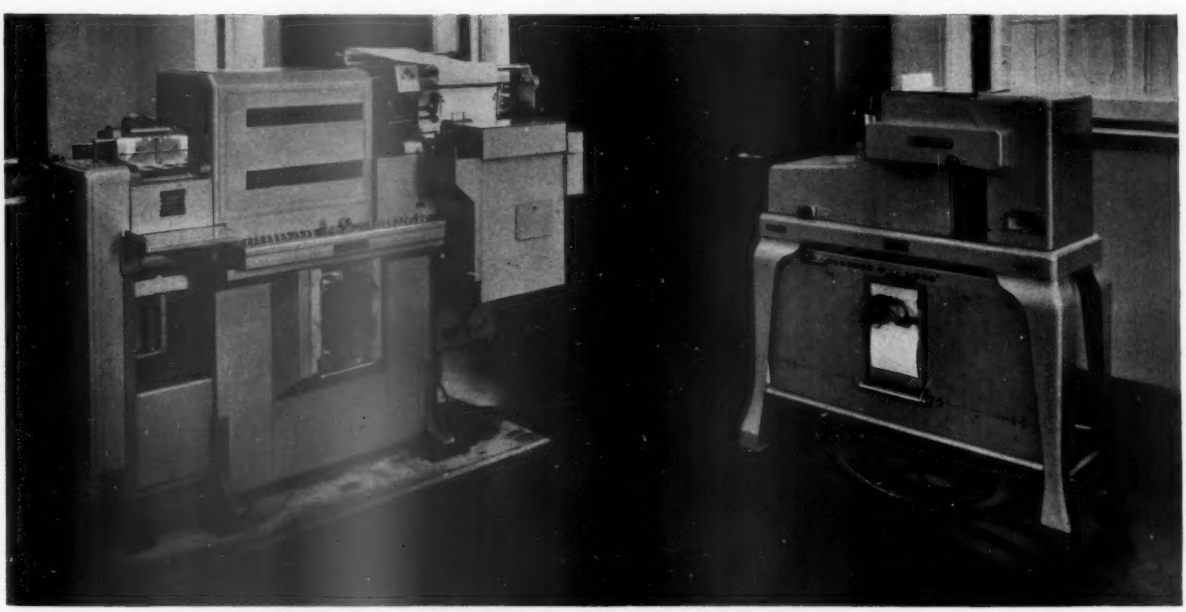
For these reasons it was decided to produce a detailed traders' account, and investigations were made of various types of machines. In considering punch-card methods it was found that only the capacity of the punch-card, and the formation of the print-bank of the type of tabulator recommended for the project, prevented the production of a fully detailed traders' account.

The latter difficulty arose out of the fact that the machine, in one line of print, was limited to 55 characters, 22 alphabetic characters of which could only appear to the left and 33 numerical ones on the right-hand side. Into this, it was necessary to compress the consignee's name, destination station, and description of traffic. The difficulty was overcome by resorting to abbreviations on the principle that if the consignee's name were shown in full, the trader would only need an indication of the destination station, and as the trader would know his own type of traffic, the description need only be such as would enable him to distinguish between the limited types of goods which he forwarded. The eventual decision alloted the consignees name 10 characters, the destination station seven characters, and the description of traffic five characters. Further limitations arose in respect of the numerical requirements which had to be compressed into 33 characters. These were overcome by a variety of expedients and the use of codes.

Further research established the fact that the machines could cope with all other accountancy functions required, and could also cope with the production of certain statistical data more accurately and more speedily than can be achieved by ordinary clerical methods.

Hollerith Machines

The machines installed were manufactured by the British Tabulating Machine Co. Ltd. (Hollerith), and consist of a Rolling Total Tabulator, Card Sorter, Collator, Gang Summary Punch, Hand Punches, and Verifiers. The operation of the machines is governed by control panel plugging which can be varied for different purposes,



Junior Rolling Total Tabulator (left) and Gang Summary Punch

thus giving considerable versatility.

Information is transferred from the original documents to cards by means of the hand punches. The cards so created are passed with the documents to verifier operators who go through the same motions, but if an error has been made, the verifier indicates this by stopping. Codes are used to denote a sender's name and to describe amounts, also to enable different flows of traffic to be separated for statistical purposes.

Once a week cards are brought together under each trader's code number and are associated with pre-punched cards which enable the trader's name and address to be printed. The two sets of cards are presented to the Tabulator which prints the name and address, passes on to the position for the first line of entry, continues printing the entries until the next card indicates a change in sender, stops at this point, totals the items posted, passes to the position for printing the total, prints this and relays the information to the Gang Summary Punch which automatically records the total on another card with any necessary data.

These cards are known as summary cards and are stored until the end of the month when they are presented with the name and address cards to the Tabulator and a statement is produced which provides a total of a trader's debit for the month. Again this total is recorded on a further card by the Gang Summary Punch for ledger purposes.

When payments are made, a credit card is created which bears the trader's code number and the amount paid. These are associated with the debit cards and the amounts matched against each other. If a balance occurs either debit or credit, it is printed and a further card is automatically created for the new balance.

Carriage of Hot Metals by Rail

Special methods developed by French National Railways

WHEN different processes are carried out on metals at works situated some distance apart, there is often a great saving in time and fuel if the metal can be carried hot between the different works, obviating complete re-heating from cold. Thus, in France, steel intended for manufacture into magnetic plates used in electrical machinery, and produced at the d'Isbergues works of the Cie. des Forges de Châtillon-Commentry & Neuves-Maisons, is laminated hot at the Denain works of the Société Usinor. The temperature of the steel, before lamination, must not be allowed to fall below 932° F. With the agreement of the Commission for the Transport of Dangerous Materials, trials have been carried out in which the ingots have been carried hot.

Special Container

At first, a container was used which could be loaded with four ingots, each weighing 5 *tonnes*. This was lined with refractory bricks and carried on a high-capacity flat wagon. The refractory lining did not prove satisfactory, and later on insulating powder was used, known as *zonolithe vermiculite*, or *vermex*. The ingots, raised 1 ft. 7½in. from the floor of the wagon by metal supports, are enclosed in a 1-ft. 7½-in. bed of vermex. The normal type of tipping wagon is used, suitably adapted to carry four ingots each weighing 5 *tonnes*. Loaded at a temperature of 1,650°, the ingots, when unloaded after 16 hr. of travel and terminal movements, are at a temperature of some 1,300°F.

Since then, the Société Usinor, to reduce the time taken to reheat steel ingots produced in its works at Trith-St. Léger and formerly sent cold to its works at Denain for lamination, has introduced steel tipping wagons of 60 *tonnes* capacity which have four metal containers.

Each of these containers is lined with a 4¾-in. layer of vermiculite concrete, and will take a hot ingot weighing 10 *tonnes*. Including terminal movements, the transit time for the 10-mile journey is 4 hr., and during this time the temperature drops some 210°. This system of transport of hot ingots permits considerable economies, and for this reason has been adopted by the Compagnie des Forges de Châtillon-Commentry & Neuves-Maisons for its own movement of hot ingots.

Molten Metal

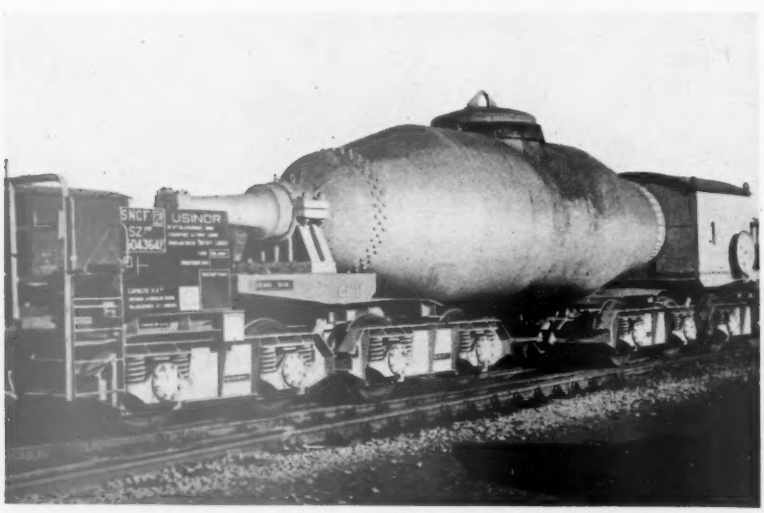
The S.N.C.F. and the Société Usinor carry molten metal between the Usinor works at Trith-St. Léger and Denain. For this purpose, three special wagons have been built for the company. Timings are arranged which ensure that they do not cross any passenger train en route.

The wagons, as with similar wagons built in the U.S.A., are in the form of two conical drums joined at their bases and are carried on two bogies. The drums, which are hermetically sealed during transit, are lined with refractory insulation and are turned about their longitudinal axis for discharge.

Ladle-Carrying Wagon

The Société des Haut Fourneaux de Saulnes transports the molten metal produced by its furnaces at Hussigny to the Longwy works of the Société Lorraine-Escaut (Senelle), a distance of 6¼ miles. The wagon designed for this purpose has a chassis with two two-axle bogies and is arranged to take a ladle of molten metal. The ladle has a lid which can be hermetically sealed and bolted down during transit. The tare weight is 21 *tonnes* and that of the ladle 20 *tonnes*. As the total permissible weight is 80 *tonnes*, 39 *tonnes* of metal can be carried.

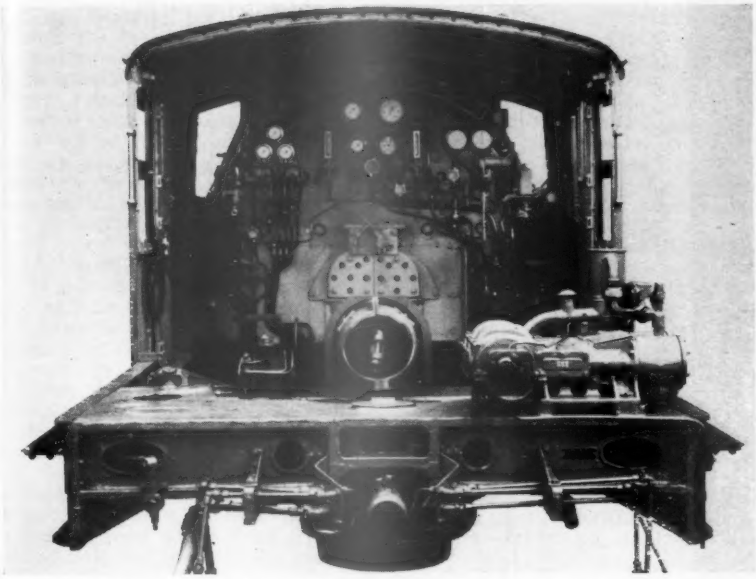
In the 3 hr. taken on the transfer trip, the temperature falls by less than 200°. In a series of trials in relatively cold weather, when the outside thermometers registered less than 40°, the temperature of the metal was 2.370°. The wagon is hauled by one of the company's own diesel locomotives in a special working, making the train self-contained.



Special wagon used by the S.N.C.F. for the transport of molten metal between Trith-St. Léger and Denain

Beyer-Garratt Locomotives for South Africa

Thirty-five "GMAM" class, 3 ft. 6 in. gauge engines of 66,800 lb. tractive effort



Cab layout, showing controls and stoker unit fitted to boiler plate

IN South Africa the rapid growth of industry and commerce has been matched by a similar expansion of the Railway. This has involved considerable improvements such as doubling the line over certain sections and the increasing use of electrification where traffic density merited. During 1956 orders were placed for wagons and locomotives to the value of approximately £18,000,000 in an effort to provide the necessary rolling stock and locomotives to keep in step with other developments. The development of the South African Railways, with its heavy grades and curves, has been towards the most successful form of articulated locomotive. Since 1921 the Railways have obtained Beyer-Garratt locomotives of increasing size and power. Increases in axleload have been permissible following the improvement of track and the laying of heavy rail.

Developments in Design

In 1938 development in locomotive design and power led to the introduction of 16 Beyer-Garratt locomotives of the class "GM" which were conspicuous for their exceptional hauling power on 60 lb. rail; the locomotives were designed with 4 ft. 6 in. coupled wheels with a tractive effort of 68,800 lb. for the operation of heavy trains at reasonable speeds. They were also the first Beyer-Garratt locomotives to employ the use of an auxiliary water tank, thereby obtaining the maximum possible power from the axleload, without the limitations of water supplies carried on the engine. It is from these original class "GM" locomotives that the design of "GMA" and "GMAM" has been evolved.

Altogether, 20 "GMAM" and five "GMA" class Beyer-Garratts, are already in service in South Africa, working on the Waterval Boven-Komatipoort section in Eastern Transvaal and on the Coligny line, while a further 35 "GMAM" class Beyer-Garratts have been recently completed by Beyer, Peacock & Co. Ltd. The locomotives are designed for operation with an auxiliary water tank, the water tank on the front unit being only used when the locomotive is detached from its auxiliary tank for shunting purposes. Of the locomotives now going into service, 30 are allocated to the Western Transvaal, three to the Coligny section, and two to the Zeerust line.

The principal difference between the "GMAM" and "GMA" classes are that the former carry 14 tons of coal and 2,100 gal. of water in the front tank, and the latter carry 11·6 tons of coal and 1,650 gal. of water. Five of the locomotives being supplied were altered on arrival to "GMA" class The maximum coupled axleload is 15·4 tons, this loading being made possible by restricting the weight on the bogies to 22 tons and balancing the coupled wheels so that the hammer blow is equal for all wheels, and does not exceed one ton on any wheel at 45 m.p.h. This arrangement enables the maximum tractive effort to be obtained while preventing the overstressing of the 60 lb. rail over which these locomotives are permitted to work. They can negotiate curves of 275 ft. radius with a gauge widening of not more than ¼ in. and a super-elevation of 4½ in.

Boiler Design

The boiler is of all steel construction and has a grate area 63·2 sq. ft. The inner firebox is manufactured from Colville's Double Crown plate and the stays are of Brown Bayley's Longstrand steel. The maximum dia. of the barrel is 7 ft. 3 in. outside, and the length between tubeplates 13 ft. 6½ in. The firebox is round topped, and five 3 in. outside dia. archtubes are fitted. The foundation ring is an interesting design feature, being manufactured from U shaped pressed-steel sections welded together. The fabricated ring is then welded to the outer and inner firebox shells. The outer and inner firebox shells are of completely welded construction; all the welds on the inner and outer fireboxes are examined by X-ray and photographic records are kept. Radial gusset stays are fitted at the smokebox tubeplate, and at the firebox back with radial roof stays.

Ample provision is made for washing out, especially the water spaces of the firebox, and the boiler has an inspection manhole in the top of the barrel behind the dome.

The firebars are mechanically rocked by a steam cylinder and are of the slotted table type. The front end of the grate incorporates a dropgrate in the centre which is hand operated from the cab. A Standard mechanical stoker of the HT type is fitted with a 5 in. × 5 in. engine, the latter is mounted on the boiler unit, where it is in a most accessible position for maintenance. This type of stoker which is manufactured by the Beyer, Peacock group has been fitted to a large number of locomotives of various classes on the South African Railways including the "GO," "GMA" and "25" classes.

The boiler is fed by two Davies and Metcalfe 12¼ VN type injectors which discharge through top feed clackboxes of S.A.R. design. Both injectors are located on the left-hand side of the locomotive for the convenience of the fireman, and are easily accessible for maintenance. They are controlled by two quick-acting steam valves mounted alongside the boiler in front of the cab. The water inlet is taken from the centre of the cross balance pipe. This pipe connects the two external equalising pipes leading to the front unit tank and to the connections for the auxiliary water tank.

Three 3½ in. Ross pop safety-valves are mounted on the firebox and a steam release valve is located in front of the top feed. Two blowdown valves, operated from the cab, are

Beyer-Garratt 4-8-2 + 2-8-4 *type, 3 ft. 6 in. gauge locomotives for South Africa, recently completed by Beyer, Peacock & Co. Ltd.*

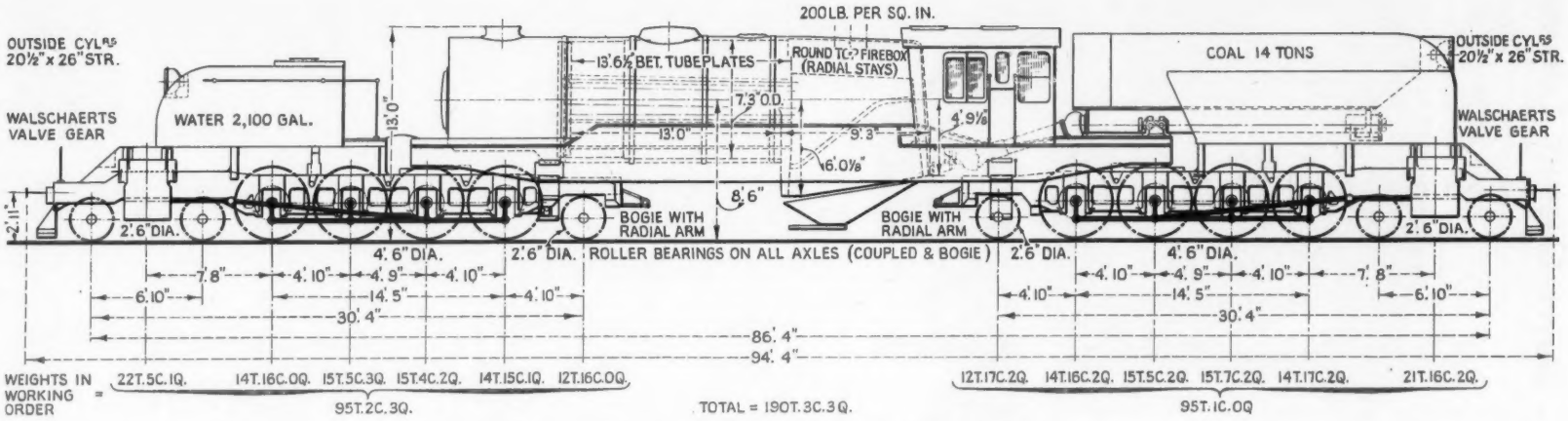


Diagram of the locomotive, showing the principal weights and dimensions

mounted in front of the firebox and discharge through baffle drums. Isolating shut off valves are fitted between the firebox and the blowdown valves. To reduce priming a scum cock is mounted at the normal water level on the boiler backplate. Two steam turrets are mounted on the boiler in front of the cab, and the controls for the various valves are carried through to the interior of the cab. The steam supply to each turret is taken through a control valve situated on top of the boiler behind the inspection manhole, and are accessible by means of the ladder on the side of the boiler. Two water gauges are fitted of the Dewrance type in accordance with S.A.R. standards, except for one locomotive which is fitted with Klinger gauges.

The ashpan is of the single-hopper type with an air space between it and the foundation ring. A horizontal sliding door is provided at the bottom to empty the pan. A drench is attached to either side of the ashpan and is controlled from the cab.

The boiler unit frame is made of two longitudinal main plates ⅞ in. thick, with flanges welded on top and bottom, braced laterally by cross-stays of ample section, and by the cast-steel pivot top centres at each end. These castings also contain the spring-loaded friction type side-bearers, which bear against the wearing surfaces on the engine unit frames.

The smokebox is of the self-cleaning type, and houses the Melesco multivalve regulator. The superheater header is of the two-piece type with 50 elements of 1½ in. outside dia.

Engine Units

The engine unit frames are of one-piece steel castings incorporating the cylinders with the inner cylinder covers, dragboxes, pivot centres and stretchers cast integrally. They are manufactured by the Commonwealth Sales Corporation and weigh about 12½ tons each. All the wheels have full flanged tyres and S.K.F. roller bearing axleboxes throughout. Those for the outer bogie and coupled wheels being of the cannonbox type while the pony truck, with outside bearings, has independent axleboxes. The right-hand truck axlebox of the front engine unit has a special cover to accommodate the generator of the Smith-Stone speedometer.

The coupled wheel axleboxes work in guides fitted with Franklin automatic wedge adjusters on one guide, and gunmetal liners on the other side. Three-point suspension is employed, and the coupled wheel and pony truck spring gear is fully compensated. The bogie and pony truck frames are one-piece steel castings supplied by the Commonwealth Sales Corporation. Both have constant resistance side movement control, and a combination of helical and laminated springing.

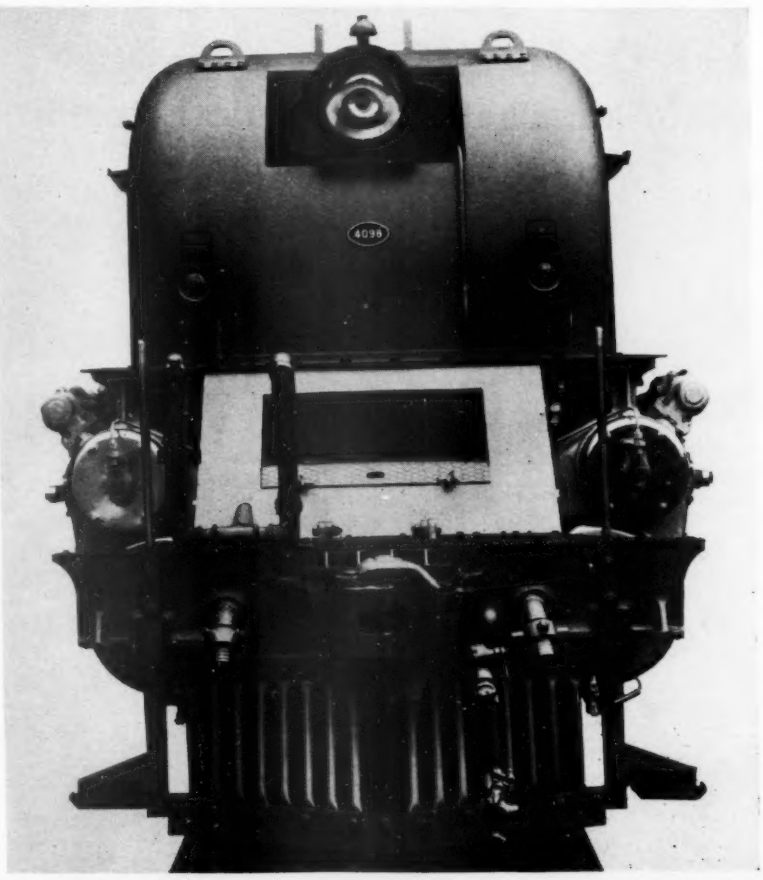
The cylinders, with renewable cast-iron liners, are fitted with snifting valves and bye-pass valves, and are connected to the main steam pipes for drifting steam supplied by Sellars type drifting valves. The drain cocks are operated by steam, and thin cast-iron discs fitted on the cylinder covers provide the pressure relief. The piston and piston valve rings are of the Koppers type with segmented bronze-iron rings. Paxton-Mitchell packing is used for the piston rod glands. The piston valves are 11 in. dia., and have a travel of 7 in. The wearing surfaces of the motion with the exception of the die block are lubricated by soft grease, as are the connecting rod small end bushes and coupling rod knuckle joint pins. The crankpin floating bushes have hard grease lubrication.

Reversing is by means of a Hadfield precision power reverser fitted on the right side of the boiler frame. This steam reverser ensures that the selected cut-off is maintained constantly, and that the minimum of effort is needed to operate the gear. A large number of locomotives now in service on the S.A.R. are fitted with this power reverser, which has eased the work of the driver considerably. The pivot centres are of the Beyer, Peacock patent self-adjusting type, which have proved so successful, and completely eliminate the need for adjustment in service. As a result of experience, provision is made on these Beyer-Garratts so that the whole locomotive can be lifted as one unit in the workshops. It has been found that there is no need for the pivot centres to be dismantled for inspection when the locomotive is shopped for general repairs.

Mechanical Lubrication

A comprehensive system of mechanical lubrication is fitted including two Davies & Metcalfe F.S.A. 3 type mechanical lubricators. The latter have 24 feeds each and an oil capacity of 14 pints, but in addition, each lubricator is fed from an auxiliary oil reservoir. These mechanical lubricators feed the cylinder barrels, steam chests, piston rods, and reversing link die blocks by means of flexible pipes. The valve spindle crosshead guides, slidebars, steam and exhaust pipe ball joints and expansion joints, are also fed from the lubricators as are the Franklin compensators, coupled axlebox guide faces, compensating spring beam fulcrum pins. This comprehensive lubrication system feeds in addition the Hadfield power reverser steam cylinder, the rocking grate steam cylinder, and the Standard mechanical stoker engine.

The water tank on the front engine unit has a capacity of 2,100 gal., while the coal bunker on the rear engine unit carries 14 tons of coal. Both of these



Front end of the locomotive, showing the layout of connections to the auxiliary water tank

are secured to their respective engine units by the patent Beyer, Peacock spring-loaded fastening, which has resulted in greatly reduced maintenance by the prevention of the transfer of shocks from the unit frames to the tanks and bunkers. The locomotive is fitted with full vacuum brake on both engine units, and a hand brake operates on the hind engine unit only

The ejector which is a Davies & Metcalfe H.T. type, is located on the right-hand side of the firebox outside the cab, and is controlled from the footplate. It has a release valve and an engine brake isolating valve. Two 24 in. dia. brake cylinders supplied by Gresham & Craven Limited for each engine unit, incorporate a delaying valve to ensure the simultaneous application of the brake both on the locomotive and on the train. The gravity-operated sanding is controlled by a steam cylinder on each unit. The sand being supplied to the outer coupled wheels of the leading engine unit for either direction of running.

The cab is large and commodious with ample ventilation to meet climatic conditions. A clear look out is possible on both sides of the cab when running in either direction. All the controls come conveniently to hand for the driver and the fireman. Chapman upholstered seats ensure comfortable conditions for the engine crew. A comprehensive set of gauges is conveniently in full view, and includes a steam chest pressure gauge and stoker engine and jet gauges. The vacuum gauges which are duplicated have one set on the back of the cab for running bunker first. All hot pipes are lagged to reduce the temperature in the cab. Stone's L.B.B. electric lighting equipment is fitted, the current being supplied by a T.G.1. turbo-generator of 500 W. capacity. Besides the Tonum E headlamps at each end of the locomotive, fittings are provided to illuminate the cab, coal bunker, reversing sector and the injector overflow pipes. The locomotives are equipped with Johnson rerailing ramps supplied by Samuel Osborne.

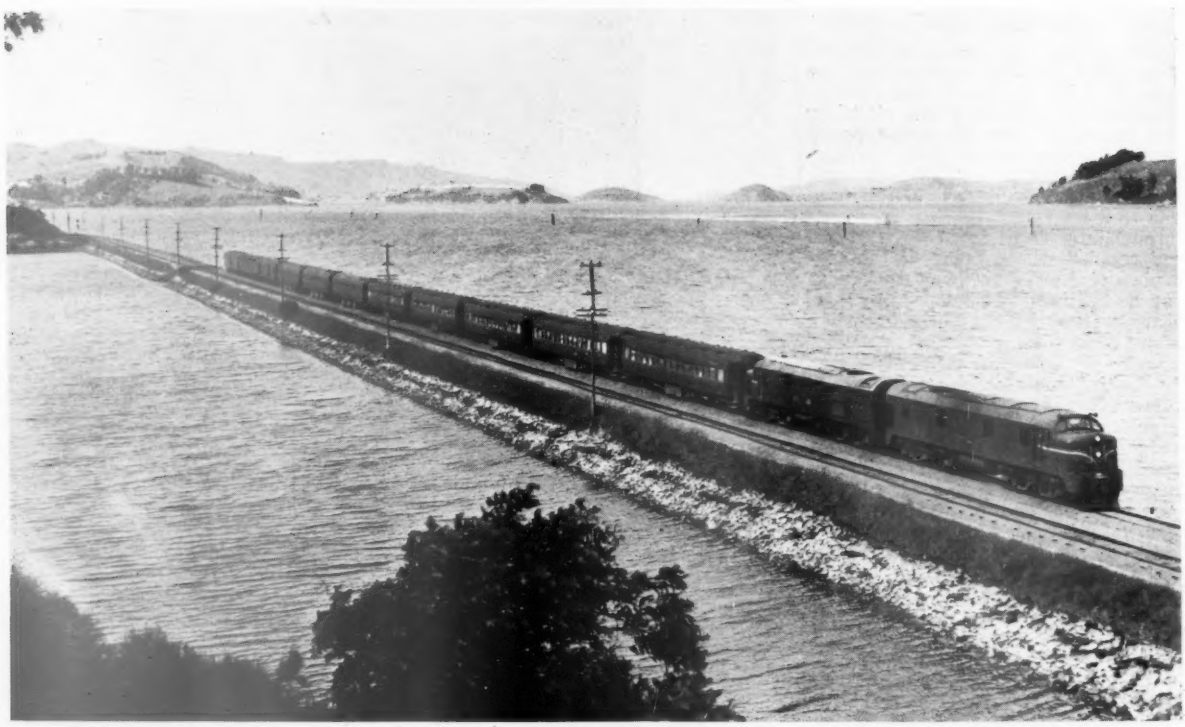
Each locomotive after track and steam trials, has been shipped to South Africa in five major sections and is reerected at the Railway workshops at Salt River. The running numbers of these locomotives are 4076 to 4110 inclusive. They have been designed to the requirements of Dr. L. Douglas, Chief Mechanical Engineer, and the contract has been undertaken in collaboration with and under the inspection of Mr. W. H. Maass, Advisory Engineer, South Africa House, London.

The principal dimensions for the "GMAM" class locomotives are as follow:—

Cylinders (4) dia. and stroke	20½ in. × 26 in.
Coupled wheels, dia.	4 ft. 6 in.
Bogie wheels, dia	2 ft. 6 in.
Wheelbase, each engine unit	30 ft. 4 in.
Wheelbase rigid, each engine unit	14 ft. 5 in.
Wheelbase total for locomotive	86 ft. 4 in.
Length over buffers	94 ft. 4 in.
Width over boiler unit platforms	10 ft.
Height of top of chimney above rail	13 ft.
Height of boiler centre above rail	8 ft. 6in.
Water tank capacity (front unit only)	2,100 gal.
Fuel capacity, coal bunker hind unit	14 tons
Boiler barrel, dia.	7 ft. 3 in.
Length between tubeplates	13 ft. 6½ in.
Evaporative heating surface, tubes	2,960 sq. ft.
Evaporative heating surface, firebox, including arch-tubes	237 ,, ,,
Evaporative heating surface, total	3,197 ,, ,,
Superheater heating surface, inside	747 ,, ,,
Heating surface, total	3,944 ,, ,,
Grate area	63·2 sq. ft.
Boiler pressure	200 lb. per sq. in.
Tractive effort at 85 per cent boiler pressure	68,800 lb.
Maximum axleload	15·4 tons
Adhesive weight	120·4 tons
Total weight, in working order	190·2 tons

CLOSURE OF STRATFORD MARKET STATION.—The Eastern Region announces that from May 6 Stratford Market Passenger Station will be closed. Passengers will be catered for at Stratford Station and by road services in the area. Parcels traffic will be dealt with at Stratford Station, from which point C. & D. services operate.

British-Built Diesel-Electric Locomotives in New Zealand



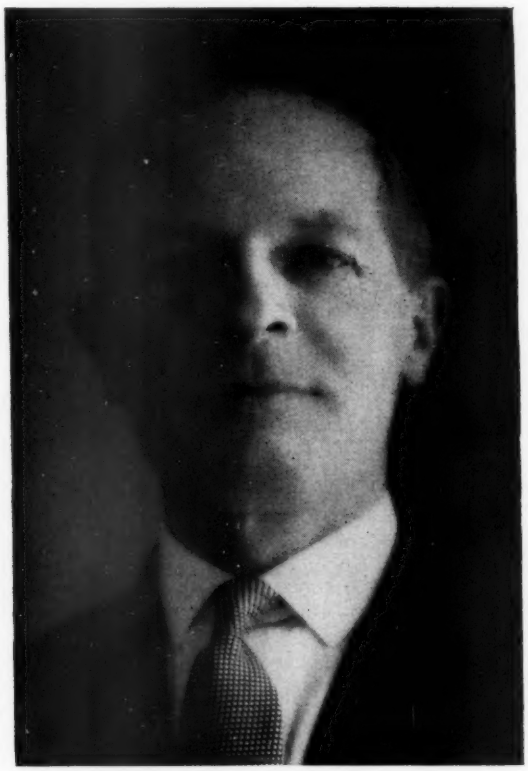
Christchurch-Invercargill "South Island Limited" near Dunedin. The two 750-h.p. English Electric locomotives are used over the heavily-graded section from Oamaru to Dunedin during the summer months

RAILWAY NEWS SECTION

PERSONAL

Mr. E. L. Gethin, Supplies & Production Adviser to the British Transport Commission, a position he has held since June, 1955, is giving up this appointment next month by mutual arrangement. The British Transport Commission states that there is no reflection on Mr. Gethin's personal status and capacity "which" it is stated "are of the highest".

Mr. R. Burgoyne
Regional Establishment & Staff Officer, Western Region, 1948-57



Mr. S. G. Ward
Appointed Regional Establishment & Staff Officer, Western Region

Mr. Robert Burgoyne, Regional Establishment & Staff Officer, Western Region, British Railways, who, as recorded in our April 5 issue, retired on March 30 after more than fifty years of service with the Great Western Railway and Western Region, entered the service of the G.W.R. in December, 1906, in the office of the Superintendent of Works, West Ealing. He was transferred to the Chief Engineer's Office at Paddington in March, 1908, and, five years later, to the General Manager's office. Mr. Burgoyne joined H.M. Forces early in 1915 and served with the Transportation Branch of the Royal Engineers in France for nearly four years. On returning to the Great Western Railway at the end of 1918, he was attached to the Staff Section of the General Manager's office and became Head of that section in 1936. Between 1929 and 1937, he was Secretary of the company's side of all the sectional councils and other negotiating bodies. In October, 1941, he was appointed Assistant Chief Staff & Establishment Officer, Great Western Railway, and as from January 1, 1948, became Regional Staff Officer, Western Region, the title of this position being altered to that of Regional Establishment & Staff Officer on January 1, 1955. For three years from December, 1951, to December, 1954, in addition to his duties as Regional Staff Officer, Mr. Burgoyne held the position of Chairman of the Railways Staff Conference and Chairman of a number of national negotiating bodies, including the Railway Staff National Council, Railway Shopmen's National Council, and the Special Joint Committee. From October, 1951, to January, 1957, he was a representative of the employers on the Industrial & Staff Canteen Undertakings Wages Board set up under the Catering Wages Act 1943. Since January, 1948, Mr. Burgoyne has been Chairman of the Western Region Centre of the St. John Ambulance Association and is an Officer of the Order of St. John of Jerusalem. For a number of years he has taken an active interest in the Staff Association of the G.W.R. and Western Region and since the affiliation of that organisation with the British Railways Staff Association at the end of 1954 has been Chairman of the Regional Council. H.M. The Queen, the Sovereign Head of the Grand Priory in the British Realm of the Most Venerable Order of the Hospital of St. John of Jerusalem, has sanctioned the promotion of Mr. Robert Burgoyne to the rank of Commander of the Order of St. John. Before his retirement he had been Chairman of the British Railways, Western Region, Centre of St. John, for the past ten years. He had also been for a number of years a member of the Headquarters Committee of the British Transport Commission on First Aid matters and of the Committee of the St. John Ambulance Association.

Mr. S. G. Ward, who, as recorded in our April 12 issue, has been appointed Regional Establishment & Staff Officer, Western Region, British Railways, joined the Great Western Railway in 1916 at Paddington Goods Station. His introduction to railway staff and labour matters occurred in 1920 shortly after the adoption of the original national agreements with the trade unions governing the rates of pay and conditions of service of all grades of railwaymen. At that stage he was transferred to the Staff Department of the General Manager's office where, over a period, he became closely associated with the many and varied aspects of railway staff administration and management/staff relations. After becoming Head of the Wages Staff Section he was appointed Secretary of the company's side of the G.W.R. Sectional Councils Nos. 2, 3, 4, and 5 (covering all grades of operating, locomotive, goods and cartage, permanent way and signal & telegraph staff) and served in that capacity for eight years. He was also Secretary of the G.W.R. Staff Committee. In 1944, Mr. Ward was appointed Assistant to the Chief Staff & Establishment Officer and became Assistant Regional Staff

Officer in 1948. In those capacities he gained wide experience of negotiations with the staff representatives and trade unions at all levels. In 1929, Mr. Ward was seconded to the Colonial Office for service with Brig.-General F. D. Hammond on a commission of inquiry into the Tanganyika Railways & Marine Services. He again visited East and Central Africa in 1955 as a member of a team of two B.T.C. officers appointed to overhaul the pay structure and conditions of the officers and staff of Rhodesia Railways and to participate in ensuing negotiations with the trade unions.

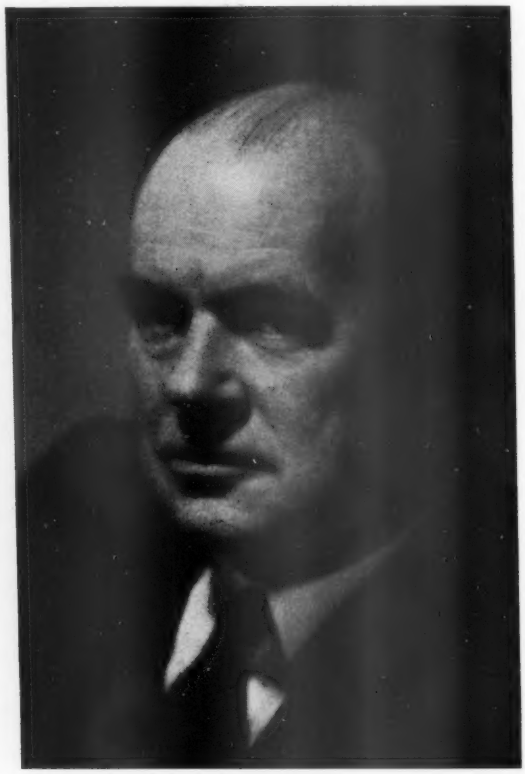
cerned with the engineering industries, he has been prominently associated with the steadily-increasing employment of consultant designers by engineering firms. He has also been responsible for the administration of the work of the Council's Street Furniture Panel.

Mr. Arthur Percival Hunter, M.Inst.T., Chief Operating Superintendent, North Eastern Region, British Railways, who, as recorded in our April 5 issue, retired on March 30, had completed more than 47 years of service. Mr. Hunter began his

Manager, and coincidentally, his appointment as Divisional Operating Manager, Derby, in 1947 was also re-designated in November of the following year as Divisional Operating Superintendent. He moved to York in January, 1949, as Divisional Operating Superintendent and became Chief Operating Superintendent, North Eastern Region, on January 1, 1955, following the decision to divide operational control of the Eastern and North Eastern Regions which had previously been exercised from London. He is a member of the Institute of Transport and has been Chairman of the North

Mr. G. Williams

Appointed Design Officer to the British Transport Commission



Mr. A. P. Hunter

Chief Operating Superintendent, N.E. Region, 1955-57

Mr. George Williams, a Senior Industrial Officer of the Council of Industrial Design, who, as recorded in our March 8 issue, has been appointed Design Officer to the British Transport Commission, took up his new position on May 1. Mr. Williams is a Member of the Society of Industrial Artists and a past member of the Society's Council. He received his early training in the motor industry and up to the war had been responsible for the body design of a number of private and commercial road vehicles. After war service in the Royal Navy he joined the staff of Design Research Unit, the consultant industrial designers, as a senior product designer in the engineering fields. In 1949 he joined the Council of Industrial Design to take charge of a group responsible for the theme of road, rail, sea, and air transport at the Festival of Britain; he also negotiated with the many organisations and firms who were to be represented in the Festival's transport displays. As the officer responsible for that part of the Council's work which is con-

railway career in 1909 in the Broad Street Goods Department of the London & North Western Railway. In August, 1914, he was mobilised with the Artists Rifles, and, two months later, he went to France where he was commissioned as an R.T.O. in September, 1915. He served on the headquarters staff of the Director of Railway Transport with the rank of major. Returning to L.N.W.R. service on demobilisation, Mr. Hunter joined the staff of the District Superintendent, Liverpool, becoming Assistant District Controller, Nuneaton, L.M.S.R., in 1925. Thereafter he was District Controller at Bedford, Coalville, Gloucester, Wellingborough, and Birmingham (Western Division) before he was made Divisional Controller (Passenger Services) at Crewe in 1932. Three years later he was appointed Divisional Freight Controller and, in December, 1939, Acting Assistant Divisional Superintendent (Traffic). In September, 1944, he became Assistant Divisional Superintendent of Operation, Crewe, an appointment later re-designated Assistant Divisional Operating

Eastern Region Federation of Lecture and Debating Societies.

Mr. J. E. M. Roberts, Assistant Traffic Adviser (Passenger), British Transport Commission, has been appointed Director of Training & Education in the Manpower Adviser's Department at British Transport Commission Headquarters. (See editorial this week.)

We regret to record the death on April 11, at the age of 77, of Mr. Freeman Wills Crofts, formerly Chief Assistant to the Chief Engineer of the Northern Counties Committee, L.M.S.R., but better known as the author of detective fiction and the creator of Inspector French. Mr. Crofts was born in Dublin in June, 1879, and educated at the Methodist and Campbell College, Belfast. He was subsequently apprenticed to civil engineering under Mr. Berkeley D. Wise, M.I.C.E., then Chief Engineer of the Belfast & Northern Counties Railway. In due course he held several

responsible engineering positions in railway work. Beginning as junior assistant engineer on the construction of the Londonderry & Strabane Railway in 1899, he became District Engineer on the Coleraine, Belfast & Northern Counties Railway a year later. In 1923 he was promoted to be Chief Assistant Engineer in Belfast on the same railway (subsequently controlled by the L.M.S. Northern Counties Committee). In 1916 Mr. Crofts suffered long and severe illness and, during his convalescence, wrote "The Cask." This book, published in 1919, was the first of his total output of 42 novels. In 1929, at the age of 50, Mr. Crofts gave up engineering for writing, though in the following year the Government of Northern Ireland made use of his administrative gifts to adjudicate on compensation claims in the River Bann drainage scheme. He was keenly interested in music. He acted as organist at Coleraine Parish Church, was a highly successful choirmaster, and had conducted on many occasions.

The following officers of British Railways and British Road Services, under the leadership of Mr. James Ness, General Manager, Scottish Region, British Railways, will leave England towards the end of this month on a four-week study tour in America. During their stay in that continent they will study latest developments of American transport, including particularly the design of railway passenger coaches, freight vehicles, containers and transfer of traffic between road and rail, freight operation, and diesel motive power. Separate and simultaneous tours will be arranged covering these subjects, and several officers will go on each tour.

Mr. R. C. Bond, Chief Mechanical Engineer, British Railways Central Staff, B.T.C.

Mr. A. E. Robson, Chief Carriage & Wagon Engineering Officer, British Railways Central Staff, B.T.C.

Mr. A. J. White, Assistant General Manager, Eastern Region, British Railways.

Mr. A. R. Dunbar, Assistant General Manager, North Eastern Region, British Railways.

Mr. G. W. Quick Smith, Member, British Road Services Board of Management.

Mr. J. R. Hammond, Assistant to General Manager (Modernisation), Western Region, British Railways.

Mr. R. C. S. Low, Diesel Traction Assistant, London Midland Region, British Railways.

Mr. H. R. Gomersall, Planning Assistant to General Manager, Eastern Region, British Railways.

Mr. J. R. Sampson, District Operating Superintendent, London Midland Region, British Railways.

Mr. T. R. V. Bolland, Assistant District Traffic Superintendent, Southern Region, British Railways.

Mr. J. H. Cleveley, Assistant Secretary (Organisation), British Road Services.

Mr. J. L. Murgatroyd, M.C., Chief Engineer of the Southern Railways of Peru of the Peruvian Corporation, has retired from that position. Mr. Murgatroyd, who was educated at Repton, joined the Royal Engineers, S.R., in 1914, and retired in 1919 as Captain, acting Major. In the following year he joined Robert McAlpine & Sons on public works and entered the service of the Great Central Railway in 1921 as a draughtsman, becoming Resident Engineer of the Wembley Exhibition loop line in 1923. Mr. Murgatroyd joined the Peruvian Corporation as Assistant Engineer in 1924 and was promoted to be District Engineer (Mountain section), Central Railway of Peru, in 1925. In 1929 he was posted as Assistant Engineer, Southern Railway of Peru. He is the older son of Mr. S. L. Murgatroyd, formerly Permanent Way Engineer (Southern Area) of the London & North Eastern Railway. The death of Mr. S. L. Murgatroyd is briefly recorded below.

We regret to record the death on March 21, in his 94th year, of Mr. S. L. Murgatroyd, Permanent Way Engineer of the Great Central Railway and later of the London & North Eastern Railway (Southern Section), after the amalgamation, until his retirement in 1929.

British Road Services announce that Mr. S. B. Bowskill, Assistant Branch Manager, Birmingham Heavy Haulage Branch, Pickfords Division, has been appointed Branch Manager in succession to Mr. E. Bulgin who retires on May 20. Mr. Bowskill received his early training with both engineering and road haulage firms. In 1940 he joined Pickfords Heavy Haulage Department at the then Tower Bridge Road depot and shortly afterwards assisted with the dieselisation of the heavy haulage Scammell fleet. For a time he was engaged in studying the application of air braking to heavy trailers and in 1944 he was appointed Assistant Branch Manager at Birmingham.

Mr. H. H. Mason has been appointed District Motive Power Superintendent, Carnforth, London Midland Region, British Railways.

Mr. H. R. Broadbent, B.Eng. (Hons.), Traction Engineer in the Development Division of the department of the Chief Mechanical Engineer (Railways), London Transport Executive, has been promoted to be Principal Executive Assistant. He will continue to be responsible for all investigations concerning traction problems, train characteristics and braking. Mr. Broadbent, who is 57, entered the service of the Metropolitan Railway in 1928 as an electrical assistant at Neasden. He transferred to the Technical Office at Acton in 1933 and was appointed Traction Engineer in 1946. He has represented London Transport at a number of meetings of the Vth Committee of the International Union of Railways, held in various countries on the Continent.

Mr. James Cooper, Chairman & Managing Director of D. Wickham & Co. Ltd., has returned from a two-month business trip to Africa, during which he visited South Africa, Mozambique, the Central African Federation, the Belgian Congo, Angola, French West Africa, Nigeria, and Ghana.

Mr. A. T. Webster, Executive Assistant to the General Sales & Service Manager of Leyland Motors Limited, flew to Holland this week in connection with 300 Worldmaster bus units with which the company is supplying the Netherlands Railways. Accompanying him was Mr. J. Eaves, one of the company's technical representatives recently returned from Bolivia, who will make an extended stay in the Netherlands as a liaison engineer between the Netherlands Railways and Leyland Motors Limited.

Mr. Alister D. Mackay has been appointed to the board of Associated British Engineering Limited. His responsibilities will be the co-ordination and full development of companies in the Associated British Engineering group primarily concerned with its automotive, industrial and electrical activities. Mr. Arthur Wood has been appointed Managing Director of Henry Meadows Limited, succeeding Mr. Mackay on his appointment to the board of the parent company, Associated British Engineering Limited. Mr. Mackay remains Deputy Chairman of Henry Meadows Limited.

General Sir William Morgan has joined the board of the Gloucester Railway Carriage & Wagon Co. Ltd.

Mr. J. Dummelow has been appointed Assistant Manager, Publicity Department, Metropolitan-Vickers Electrical Co. Ltd.

Mr. J. Rostron has been appointed Assistant Sales Manager, Traction Department, Metropolitan-Vickers Electrical Co. Ltd.

Expandite Limited announce the following appointments: Mr. R. T. Richey to be Area Manager, Motor Industry Division; Mr. P. A. Tennant to be Area Manager, Eastern Counties.

The Minister of Transport & Civil Aviation, with the approval of the Prime Minster, has appointed Mr. P. Faulkner to be a Deputy Secretary in the place of Sir George Stedman, who retires on May 31.

Sir Hugh Beaver, Managing Director of Arthur Guinness Son & Co. Ltd., has been elected President of the Federation of British Industries. He succeeds Sir Graham Hayman, who has held the position for the past two years. Sir Hugh Beaver is also a director of Richard Thomas & Baldwins Limited, a director of the Colonial Development Corporation and Vice-President of the British Institute of Management. From 1931 until 1942 he was a partner in Alexander Gibb & Partners, consulting engineers.

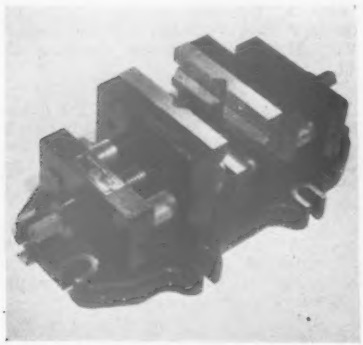
Sir Vincent Z. de Ferranti has been elected President of the British Electrical & Allied Manufacturers' Association (B.E.A.M.A.) for the coming session 1957-58. Sir Vincent de Ferranti is Chairman & Managing Director of Ferranti Limited. Mr. J. O. Knowles, a director of Metal Industries Limited, is Chairman, and Mr. W. Kenneth G. Allen has become Vice-Chairman of the B.E.A.M.A. Council. Mr. Allen is Chairman & Joint Managing Director of W. H. Allen Sons & Co. Ltd.

An all-party group of M.P.s. is leaving on April 23 for France, where for four days they will be the guests of the French National Railways, at the invitation of Monsieur Louis Armand, President of the S.N.C.F. The purpose of the tour is to inspect the measures taken to modernise the French railways and recent equipment in the light of the modernisation programme of British Railways. The party will visit installations around Paris and then proceed by the "Mistral" express to Dijon and Lyons, thence to Strasbourg and Lille, and back to Dunkirk, whence it will return to London by the "Night Ferry." It will consist of the following Conservatives, headed by Mr. Geoffrey Wilson (Truro): Mr. R. Gresham Cooke (Twickenham), Mr. Leslie Thomas (Canterbury), Mr. Ronald S. Russell (Wembley South), Mr. Harold Gurden (Selly Oak), Mr. Ray Mawby (Totnes), and Mr. Norman Cole (Bedfordshire S.N.L.C.). The Labour M.P.s. headed by Mr. Ernest Davies (Enfield E.), will be: Mr. G. Strauss (Vauxhall), Mr. David Jones (The Hartlepools), Mr. A. G. Champion (Derbyshire S.E.), and Mr. Charles A. Howell (Perry Barr), accompanied by Mr. Carol Johnston, Secretary to the Parliamentary Labour Party. Mr. C. M. Hannoyer, General Manager of French Railways Limited, London, will accompany the group.

NEW EQUIPMENT AND PROCESSES

Self-Centring Vice

THE B.T.G. self-centring vice, designed to centralise work and hold it accurately and rigidly, can be used on various types of shaping, milling, and grinding machines in railway workshops.



The jaws have a width of 6 in. and will open out to 6 in. They are moved by a square thread screw which can be operated from either end.

Diameters from ¼ in. to 2 in. can be held by the V-grooves in the jaws. The workpiece is rested on the centrally disposed platform or on the guide bars on which the jaws travel; the low height and strong construction of the vice enabling work to be held firmly under the heaviest load.

The standard soft steel jaws are replaceable and spare jaws are available which can be machined to suit any particular component. Overall dimensions are 1 ft. 5⅜ in. long by 9⅜ in. wide by 5½ in. high. The weight is 78 lb.

Price and delivery of the B.T.G. vice are obtainable from the manufacturer, Birmingham Tool & Gauge Co. Ltd., Soho Hill, Handsworth, Birmingham, 19.

Mobile Axle Lubricator

THE Type 585ES, mobile axle lubricator has been designed and supplied to British Railways, for use in diesel maintenance depots for refilling axleboxes of diesel railcars, and so on.

Fabricated throughout in heavy gauge metal with a sheet steel cowl covering the oil container, the 585ES lubricator is designed to dispense heavy oils. These are contained in a standard-size 45-gal. barrel installed horizontally below the protective metal cover. The cover is secured by substantial clips which are easily removed for changing over barrels.

The oil is dispensed from the barrel by an electrically operated pump from mains supply, which has a capacity of 1·1 gal. per min. Oil is pumped from the barrel, through the 7-in. dial recording meter, and via the 7-ft. delivery hose into the axles. The hose terminates in a quick action shut-off nozzle of the manufacturer's design.

In view of the viscous nature of axle oils, the machine is fitted with a bed plate heater in order to keep these lubricants more fluid, especially for winter operation. The unit is also mounted on four solid rubber tyres, the front pair of which are fixed to a turntable which swivels with the towing handle.

Leading particulars of the unit are height, 4 ft. 9 in.; length, 5 ft.; and width, 2 ft. 10 in.

The price of the 585ES is £310 18s., and delivery is twelve weeks. It is marketed in the United Kingdom by Wakefield-Dick Industrial Oils, Limited, 67, Grosvenor Street, London, W.1.

Precise Distance Measurement

THE Tellurometer system devised to enable distances to be measured with extreme accuracy and at the same time to be portable for traversing rough country, is suitable for civil engineering railway surveys. The system makes use of developments in electronics, employing the velocity of radio wave propagation instead of light as a medium.

Advantages include an accuracy commensurate with that of geodetic triangulation, simplicity of operation, ease of erection, and robust construction obviating maintenance problems.

The system operates in the 10-cm. wavelength region and measures the travel time of radio waves over the length to be determined, with an accuracy of a fraction of one micro-millionth of a second. Measurements can be made by day or night and visibility is immaterial. In general, optical line of sight is required over the length to be measured.

To measure a single line, one master station and one remote station are necessary. Measurements are made from the master station and an operator is required at the remote station. A built-in duplex radio telephone circuit is included in the system and is used in the measurement procedure. If a number of remote stations are employed, a number of lines may be measured from the master station in the course of one setting up.

Although the master and remote instruments are physically similar, they are not interchangeable. Both are self-contained units with built-in aerial systems. The instruments themselves are constructed of special aluminium alloy, anodised and painted, the frame being of riveted sections, panels and chassis members being secured by plated non-corrosive screws or bolts. Components are as far as possible of standard types and selected as being

suitable for all climates. The illustration shows one of the instruments being operated.

The price of the master and remote instruments is £1,100 each. Prices of other ancillary equipment and delivery of all units, which will shortly be available in this country, can be obtained from the distributors, Cooke, Troughton & Simms Limited, Haxby Road, York.

Development in Lithium-Base Greases

A DEVELOPMENT in the range of lithium-base greases, based on lithium 12 hydroxy stearate, is announced.

The Shell Alvania range now contains an effective water-soluble corrosion inhibitor, which confers anti-corrosive properties where water can give access to bearings in service. Normal lithium-base greases of this type have outstanding mechanical stability and can be used in a great variety of applications, particularly ball and roller bearings, over a wide temperature range, for example, high speed traction motor and roller axlebox bearings, replacing numerous conventional greases.

Long "shelf-life" and resistance to drying out and hardening in service are also special features of these greases.

This development represents an achievement of the more recent research and development work carried out by the manufacturer's research centre. Other advantages secured for greases of this type include even greater oxidation stability under both dynamic and static conditions than has been achieved hitherto, resulting in the service life of a charge of grease being extended in many cases.

Details of price and delivery may be obtained from the manufacturer, Shell-Mex & B.P. Limited, Shell-Mex House, London, W.C.2.

Compact Facing Lathe

THE Ravensburg KT.45 Facing Lathe stated to be comparatively fast and compact appears suitable for use in railway workshops for such items as piston heads, cylinder heads and so on.

The KT.45 will deal with short workpieces up to about 40 in. turning dia. The carriage is operated from the front, good vision and access to the workpiece when taking measurements and observing the work in progress is an advance on conventional designs where the operator stands alongside the machine.

Constructional features include short, extremely wide and rigid bed with chip openings between the shears and wide carriage with long cross slide for long cross traverse; the two outer bedways extend past the faceplate and are fully protected against swarf by the carriage wings.

The main movement of the carriage is across, that is, parallel with the faceplate plane. The feed to the tool parallel with the centre line of the machine is obtained by the travel of the top slide, short workpieces requiring a short sliding motion only. Power feeds are provided to the carriage for the surfacing motion, and to the swivel slide for the sliding motion and for taper turning. The cross slide has a rear extension for mounting an additional toolpost or single co-ordinate copying attachment.

The complete carriage, that is, saddle and apron, can be moved on the wide bed by hand through a traverse screw to suit the width of the work.

Extra equipment available includes a rapid traverse for cross slide and top slide, transverse copying attachment, and coolant equipment. Dimensions are: height of centres over flat bed, 22 in.; maximum swing 5 in. before bedplate, 52 in.; maximum turning dia. over lower slide, 26 in. The power of the driving motor is approximately 11 kW. at 1,500 r.p.m. The net weight of the machine is, roughly, 4¼ tons.

The price and delivery details are available on application to the distributors in the United Kingdom, the Mortimer Engineering Company, 210, Acton Lane, Harlesden, London, N.W.10.

Safety Spectacles

WIDE visual area is afforded with the Itex No. 424 safety spectacles, which are suitable for operations where there is

a danger of flying particles as when using hand grinding tools or chipping brass components. The acetate lenses are curved to provide extra coverage at their outer circumference. The frames are made of strong, pliable nylon and are light enough when folded to be carried easily in the pocket. The side shields, providing additional safeguard, fit comfortably against the face.

Delivery can be made from stock. The price can be obtained from the manufacturer, the Safety Service Company, 34a, Stonebridge Park, London, N.W.10.

Boiler Descaler

A LIQUID boiler descaler which has been used in the boilers of locomotives and stationary plant of private firms on the Continent and now available in this country under the trade name, Idro-X, is an alkaline liquid based on organic compounds which has a mainly physical effect.

There is no violent chemical reaction, and the descaler may be added to the feedwater, even in large quantities, without danger either to the purity of the steam or to the walls or tubes of the boiler. The organic components absorb the scale-producing salts without combining with them.

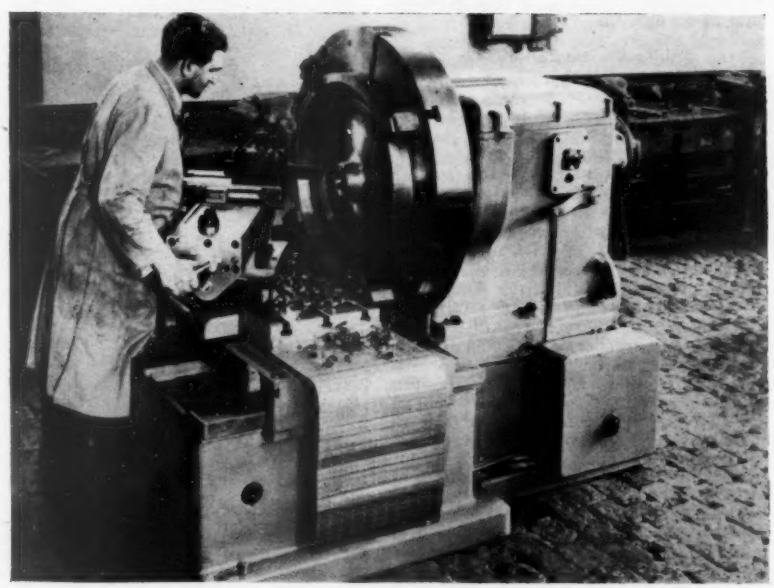
Infiltrating between the scale and the boiler walls, the organic substances detach the scales in flake form. After these have been removed and the clean boiler is operating on Idro-X treated feed water, any precipitated salts are transformed into a light and removable sludge, which can be easily removed by a normal blow-down but is of such a consistency that it cannot be carried over simultaneously with the steam.

Idro-X removes the scale and, it is stated, also eliminates corrosion of the boiler walls by absorbing the oxygen and carbon dioxide from the water, so de-aerating it at the same time.

The manufacturer advises that the product should be fed to the boiler between the supply tank and the feed pump or injector by means of a pipe-branch, with a reservoir ending in a funnel and provided with stop-cocks at either end, placed at the suction-end of the feed pump or injector.

If a preheater or economiser is used in conjunction with the boiler it is recommended to feed Idro-X more or less continuously so as to ensure that a certain amount of the product is present in the feed water passing through the economiser. This may be achieved by means of a suction valve placed as indicated above and permitting continuous dosing.

The price is £1 10s. 6d. a gal. The descaler is supplied in returnable 8-gal. drums from stock. The manufacturer is J. G. Gregory & Son, Limited, of Talke, Stoke-on-Trent, Staffs.



French Summer Passenger Train Services

Three new Paris-Brussels 70 m.p.h. non-stop diesel trains, and an 80·3 m.p.h. booking of the "Mistral" from Paris to Dijon

Train service improvements of considerable magnitude will come into operation with the introduction of the French summer train services on June 2; they affect both the internal services and the through services to and from adjacent countries. Included in the changes is the introduction of the first "Trans-Europe-Express" or "T.E.E." diesel streamline trains, with which time is cut, not merely by their high running speeds, but also by the carrying out of frontier passport and customs examinations in the trains, and the consequent reduction of frontier stops to 15 min. or so.

Paris-Brussels-Amsterdam

Three T.E.E. services are to be introduced between Paris and Brussels, all non-stop over the 192·2 miles between Paris Nord and Brussels Midi in 165 min. (69·9 m.p.h.). They will leave Paris at 7.38 a.m., 5.45, and 8.48 p.m., and Brussels at 7.45 a.m., 4.15, and 8.55 p.m. The 7.38 a.m. and 5.45 p.m. will continue through to Antwerp and Amsterdam, taking 5 hr. 34 and 33 min. respectively, and the 4.15 and 8.55 p.m. from Brussels will start from Amsterdam at 1.28 and 6.4 p.m., taking 5 hr. 33 and 36 min. for the journey. The 5.45 p.m. from Paris and the 1.28 from Amsterdam are the existing 5.45 p.m. down and 1 p.m. up diesel trains, but accelerated 30 and 27 min. respectively between Paris and Amsterdam; the other two services each way will be new. Each train will make the return journey between Paris and Amsterdam in the day. Other trains between Paris and Amsterdam also will be accelerated from 10 to 20 min. as the result of the extension of the Dutch electrification to the frontier station of Roosendaal; the most important improvement will be that of the 3 p.m. from Paris, which will leave at 2.9 p.m., run the 95·1 miles to St. Quentin in 87 min. (65·6 m.p.h. and the fastest steam-operated schedule in France), reach Brussels at 5.28 instead of 6.53 p.m., and Amsterdam at 9.3 instead of 10.47 p.m., a total acceleration of 53 min.

Thionville-Strasbourg-Basle

Electrification will be brought into use throughout between Luxembourg and Basle, coupled with the Belgian and Luxembourg National Railways electrification between Brussels and Luxembourg; as a result the long-distance services will be transformed. The 7.44 a.m. from Brussels will leave at 8.14 a.m., but reach Basle 13 min. earlier, at 4.37 p.m., an acceleration of 43 min. The 1.40 p.m. "Edelweiss" diesel train will become a T.E.E., extended to start from Amsterdam at 11.10 a.m., leaving Brussels Nord 17 min. later, at 1.57 p.m., and reaching Basle 5 min. earlier, at 8.10 p.m., and Zurich 11 min. earlier, at 9.25 p.m., a total gain of 28 min. from Brussels. The summer 11.4 p.m. from Brussels will start at 10.34 p.m., but reach Basle at 6.40 instead of 8 a.m., and by this 50 min. gain will make Swiss connections nearly 1¼ hr. earlier to Berne, Lucerne, Lugano and Milan.

The 8.22 p.m. sleeping car express from Brussels Nord will be replaced by a new train from Brussels Midi at 6 p.m. and Nord at 6.9 p.m., combining at Thionville with another train from Lille at 4.10 p.m.; through Brussels-Rome and Lille-Milan coaches and a Brussels-Milan sleeping car will be included. This express will reach Basle at 2.5 a.m. and after a wait of 40 min., will proceed at 2.45 a.m., avoiding reversal at Lucerne by taking the Rotkreuz route from Basle to Arth-Goldau, and so making the unusually fast time of 4 hr. 6 min. from Basle to Lugano, reached at 6.51 a.m. Arrival at Milan will be at 8.43 a.m., and the journey of 14 hr. 34 min. from Brussels to Milan will be 1¼ hr. faster than by any existing service. Also the 8.14 a.m. from Brussels Nord will combine at Thionville with a new through train from Dunkirk at 4.20 a.m. via Lille (7.12 a.m.) in connection with the "Night Ferry" service from Dover; the latter will convey through carriages from Dunkirk to Basle and Rome.

In the reverse direction there will also be some substantial accelerations. The T.E.E. "Edelweiss" will leave Zurich 1 hr. earlier, at 11.45 a.m. instead of 12.49 p.m., and Basle 70 min. earlier, at 1 p.m., reaching Brussels Nord at 7.6 p.m., 92 min. earlier (a gain of 28 min.), and will run through to Amsterdam, arriving at 9.48 p.m.

Accelerations over the Brussels-Strasbourg-Basle main line are supplementary to accelerations of up to 30 min. made in the last issue of the timetables, due to the partial bringing into use of the electrifications now carried practically to completion.

Paris-Liège-Cologne

Changes on the Nord main line to St. Quentin and beyond include the division of the 3 p.m. from Paris Nord into the 2.9 p.m. from Brussels, already mentioned, and a new 2.12 p.m. "Paris-Scandinavia Express," with through coaches and sleeping cars for Grossenbrode, Copenhagen, and Stockholm, due at Liège at 6.58 and Cologne at 9.19 p.m. The "Nord Express" will leave Paris Nord 1 hr. earlier, at 8 p.m. instead of 9 p.m., and on the return journey will be into Paris at 8.55 instead of 9.35 a.m., while the southbound "Paris-Scandinavian Express" will arrive at 5.25 instead of 6.5 p.m., having left Cologne at 9.38 instead of 9.59 a.m. and made additional stops at Jeumont, Maubeuge, Aulnoye and St. Quentin. The 5.42 p.m. "Paris-Ruhr" diesel train, in future one of the T.E.E. series, will omit its Aulnoye stop and call first at Maubeuge, running the 141·9 miles from Paris in 115 min. (74 m.p.h.). As a result of electrification between Metz and Saarbrücken and reduction of the Franco-German frontier stop, the Frankfort section of the 8 a.m. from Paris will arrive at 6.8 p.m., 57 min. earlier; the 12.21 p.m. back will start at 1.13 p.m., but will reach Paris at 11.12 p.m. as before.

Paris-Lyons-Marseilles-Nice

With a further 5 min. acceleration of the southbound "Mistral" (1.10 p.m. from Paris Lyon), the S.N.C.F. will attain its ambition of bringing Lyons, 317·4 miles from Paris, within 4 hr. of the capital. The overall average speed of 79·5 m.p.h. will include the Dijon stop; the new timing of 146 min. for the 195·3 miles to Dijon (80·3 m.p.h.) will introduce the first long-distance 80 m.p.h. schedule in Europe since the withdrawal of the German diesel streamline trains at the beginning of the war; the 122·1 miles on to Lyons will be allowed 92 min. (79·6 m.p.h.). Marseilles, 535·4 miles, will be reached in 7 hr. 47 min., and, inclusive of nine intermediate stops, Nice, 647·7 miles, in 10 hr. 42 min. (63 m.p.h.). In the reverse direction the "Mistral," still leaving Nice at 12 noon, will reach Paris 9 min. earlier, at 10.51 p.m., being allowed 93 min. from Lyons to Dijon and 148 min. thence to Paris. To permit the higher speeds necessary, the speed limit over certain sections will be raised to 160 km. p.h. (99½ m.p.h.).

The recently-inaugurated "Mont Cenis" diesel train, running from Lyons to Turin and Milan, will become a T.E.E. service; it will run from Lyons to Chambéry by the shorter St. André-le-Gaz route (instead of, as previously, by Culoz and Aix-les-Bains), and will be accelerated 25 min. The start from Lyons will be at 6 p.m. instead of 5.35 p.m., which will permit connection to be made with the 12.34 p.m. express from Paris (due Lyons at 5.54 p.m.) as well as with the "Mistral," due 5.10 p.m.; Milan will be reached at 11.27 p.m. as before.

In the reverse direction, with departure from Milan at 7.25 a.m. unaltered, Lyons will be reached 29 min. earlier, at 12.44 p.m., but with no connection for Paris until 1.50 p.m. A new T.E.E. railcar service will run from Milan at 6.25 a.m. and Genoa at 8.15 a.m. via the coast to Nice and Marseilles, arriving at 1.30 p.m.; return will be at 4.45 p.m., and arrivals at Genoa and Milan will be at 10.3 p.m. and 12.5 a.m. respectively. This will be 4 hr. 20 min. quicker than any existing Milan-Marseilles service.

Paris-Bordeaux-Irun

The 10.45 p.m. from Paris Austerlitz to Irun will be relieved at weekends by a new express at 10.35 p.m., on a considerably faster schedule, calling only at Les Aubrais, St. Pierre-des-Corps, Poitiers, and Angoulême to Bordeaux, which will be reached at 5.35 a.m. (2 hr. 11 min. earlier); Biarritz will be reached at 8.15 a.m. and Hendaye at 8.38 a.m. (both just over 3 hr. earlier).

Anglo-French Services

In contrast with the accelerations elsewhere, the progressive deceleration of the Paris-London services will continue. The greatest slowing down will be of the afternoon service from Paris, which will leave Paris Nord at 1.48 p.m., 60 min. earlier, will be without refreshment facilities and will require passengers to wait no less than 59 min. at Boulogne Maritime before departure of the boat and 40 min. at Folkestone Harbour; Victoria will be reached at 10 p.m., 30 min. earlier, in an overall time of 8 hr. 12 min. from Paris. In 1939 this service left Paris at 4.25 p.m., and passengers were in Victoria by 11 p.m., in 6 hr. 35 min.

The 8.15 a.m. from Paris now will take 7 hr. 50 min. to London, compared with 7 hr. 10 min. in 1939, and the 12.24 p.m. 7 hr. 6 min. (for Pullman passengers), compared with 6 hr. 40 min.; even the fast diesel railcar service from Paris at 7.3 a.m. will need 7 hr. 2 min. to London, partly because of 40 min. wait at Folkestone Harbour and the very slow timing of 115 min. thence to Victoria. In the reverse direction the 9 a.m. summer service from Victoria will need 8 hr. 2 min. compared with 6 hr. 48 min., the 11 a.m. 7 hr. 10 min. as against 6 hr. 44 min., and the 2 p.m.

7 hr. 41 min. as compared with 7 hr.; only the 4.30 p.m. service, with the diesel rail-car connection from Boulogne to Paris, will be slightly faster, 6 hr. 35 min. as compared with 6 hr. 41 min.

A notable improvement is the provision of through London-Brussels sleeping cars by the "Night Ferry," via Dover/Dunkirk, reaching Lille at 6.22 a.m. and Brussels Midi at 8.44 a.m. in 10 hr. 44 min. from Victoria; in the reverse direction departure from Brussels will be at 9.8 p.m. and Lille (where there will be 42 min. wait) at 11.57 p.m., Victoria being reached at 9.10 a.m. Between Dunkirk and Lille the Brussels cars will run attached to the new Dunkirk-Basle train in each direction.

New Enquiry Office at Brighton

A centrally-heated enquiry office has been opened recently at Brighton Central Station, Southern Region, and is handling over 200 enquiries a day at present, a figure which will probably rise to 500 a day during the summer.

The illumination over the public area is provided by the Lumenated Ceiling architectural lighting system, which consists of an overall false ceiling of sheets of corrugated translucent vinyl plastics suspended below an arrangement of fluorescent lamps. The false ceiling evenly diffuses the light and appears, in effect, to be the source of illumination. A localised lighting system of fluorescent lamps is used over the main counter, with tungsten spots high-lighting a large relief map showing British Railways Southern Region services. The counter top and front panels are faced in Warerite laminated plastics.

The design of the new office, including the lighting and heating schemes, was prepared in the office of the Chief Civil Engineer, British Railways, Southern Region, and the constructional alterations were carried out by A. Edmonds & Co. Ltd. The central heating was installed by the Chief Civil Engineer's department and the lighting installation was by the Chief Mechanical & Electrical Engineer's department.

New enquiry office at Brighton with diffused lighting and illuminated relief map behind counter

Prototype Track Recording Coach for British Railways

Increased accuracy at higher speeds achieved with new design

The decision has been taken to introduce a prototype track recording coach to British Railways, capable of giving a highly-accurate record of the condition of track at speeds considerably higher than has been possible with existing recording equipment.

A specification for a two-axle self-propelled vehicle was drawn up by the British Railways Civil Engineers and circulated to manufacturers in this country, concentrating on the two most important features of curvature and cant, and in particular, the measurement of their relationship on transition curves.

This specification stated that the coach was to be capable of travelling at speeds up to 30 m.p.h. on a rising gradient of about 1 in 100, and to have an i.c. engine, and suitable transmission, driving and braking controls, and conform to British Railways requirements in general design. The individual axle load was not to be less than 8 tons, and the coach was to be capable of accommodating ballast to give axle loads up to 12 tons to obviate voids under sleepers.

Continuous Recording

The apparatus to be provided was to record continuously the various readings of cant, and average curvature on a chord length and so on, with a required accuracy. Amongst other items, the coach was planned to be completely self-contained as regards power supplied for instrumentation and other purposes such as lighting and heating, and suitable for testing from an external power supply; the importance of simplicity and reliability of the vehicle and equipment being stressed.

Preliminary Investigation

Before asking the manufacturers to proceed with the development of the apparatus necessary it was thought desirable to prepare a design study, to show whether it was, in fact, possible to meet the specification. A report was later produced which indicated that it appeared possible to do so.

Consequent on this the British Transport Commission placed a development contract with Elliott Bros. (London) Ltd., for the manufacture of a prototype coach for service operational trial, with D. Wickham & Co. Ltd. as sub-contractors for the mechanical parts.

Measuring System

The problem of measuring cant, to plus or minus ¼ in. called for in the specification, is achieved by gyroscopic equipment, similar to that used in guided weapon fields, though disturbing forces in a railway vehicle are generally more vicious than those found in these spheres.

Curvature is measured by using a system of three probes bearing against the inner face of the rail, the distance between the centre probe or slipper and the line connecting the two outer slippers, giving the offset and a measurement of curvature.

Preliminary experiments on a trial probe system over a distance of some 1,800 miles have indicated that the required probe accuracy can be achieved, and that the wearing life is satisfactory.

With the vehicle it will be possible to pin-point specific defects in the track which can be rectified in conjunction with present maintenance methods or possibly combined with new principles of maintenance. These are matters which will arise out of the extensive trials to be made with the prototype coach when the complete equipment is available.

Staff & Labour Matters

Railway Shopmen's Wage Claim

At a meeting of the Railway Shopmen's National Council on April 15, consideration was given to the B.T.C. reply to the claim of the Employee's side for a 10 per cent increase in railway shopmen's rates of pay. This reply comprised an offer of an increase of 5 per cent attached to which was a proposed joint declaration in the following terms:—

"At a meeting of the Railway Shopmen's National Council today representatives of the B.T.C. and the trade unions which comprise the employees' side of the Council gave consideration to the claim for an increase in wages of 10 per cent which had been made by the unions concerned. During the discussions reference was made to the establishment of the British Railways Productivity Council and the realisation by the unions and the staff of the change in outlook necessary to enable the modernisation of the railways to be a success.

"The parties to the Railway Shopmen's National Council are agreed not only that the ground already gained should not be lost but that the pursuit of increased efficiency should be continued with vigour.

"The Commission drew attention to the great difficulty of securing financial stability in the industry in the face of recurrent wage claims at too frequent intervals. This was appreciated by the union representatives. It was recognised that if periodical reviews at agreed intervals of time could take place between the management and the unions which could embrace

all factors affecting the remuneration and conditions of the staff, including increased productivity, this would be conducive to harmony within the industry.

"It was felt that such joint examination could take place in a spirit of mutual confidence and trust and that exceptional factors outside the control both of the Commission and of the unions might require a special reconsideration of wage levels. The union representatives agreed to give formal and sympathetic consideration to this proposal."

The Commission reply to the claim was not acceptable to the employees' side, which was not prepared to be a party to the joint declaration, and it is understood the employees' side of the Council will give further consideration to its position in the matter.

Questions in Parliament

Transport Consultative Committees

Major Sir William Anstruther-Gray (Berwick & East Lothian—U.) asked the Minister of Transport & Civil Aviation on April 10 whether his attention had been drawn to a complaint by the Central Consultative Committee that too few people appreciated the fact that they existed to receive representations and make recommendations on any matter, including charges, affecting the services provided by the B.T.C., and what action he proposed to take to bring the existence and functions of this committee to the notice of the public.

Mr. Harold Watkinson declared that no suitable opportuniy was lost of drawing attention to the existence of the Central and Area Transport Consultative Committees and to their most valuable work.

Sir W. Anstruther-Gray suggested the Committee had lost the confidence of the ordinary people because so many of its members represented public bodies. Would the Minister consider reforming its constitution?

Mr. Watkinson: I am not at all aware that it has lost the confidence of the public. It is inevitable that consultative committees of this type have to have a fairly large proportion of public bodies represented on them, because it very often facilitates their work to do so.

Mr. Ernest Davies thought the Committee was doing extremely valuable work, particularly in connection with branch lines.

Level Crossings

Mr. F. H. Hayman (Falmouth & Cambourne—Lab.) asked the Minister of Transport & Civil Aviation on April 3 whether orders proposed to be made by the Minister under Clause 43 of the British Transport Commission Bill would be submitted to Parliament; and whether they would be subject to the affirmative or the negative procedure.

Mr. Harold Watkinson replied that they would not. A special report on this very important problem would be published shortly.

Railway Modernisation Contracts

Miss Elaine Burton (Coventry S.—Lab.) asked the Minister of Transport & Civil Aviation on April 3 whether, as a result of further examination, he was able to reconsider his decision not to give a general direction to the B.T.C. asking it to give special consideration when placing contracts in connection with the modernisation programme of British Railways to the needs of localities where there is present unemployment and unused production capacity.

Mr. Harold Watkinson said he could find no reason to change the reply he gave on February 20.

Miss Burton asked whether it was at all likely that any of the work might go to Coventry, where there were skilled men who had been turned off defence work and where there were the facilities.

Mr. Watkinson said he understood that some discussions had taken place with one firm which, if not in Coventry, was associated with Coventry. It was his wish that the B.T.C. should help whenever it could by placing orders in areas where there were unemployment difficulties.

Suburban Station Car Parks

Mr. R. S. Russell (Wembley S.—C.) asked the Minister of Transport & Civil Aviation on April 3 what progress he had made in his conversations with the motoring organisations and the B.T.C. with a view to persuading motorists to park their cars at stations outside London and complete their journeys by train.

Mr. G. R. H. Nugent, Joint Parliamentary Secretary: Preliminary inquiries have shown that the amount of parking space provided at most suburban stations is adequate to meet the present demand. British Railways and London Transport have, however, already announced plans to extend such facilities, and I hope that motorists will take full advantage of them and, when they can, complete their journeys by rail.

Station Bookstalls

Mr. F. Beswick (Uxbridge—Lab.) asked the Minister of Transport & Civil Aviation on April 3 if he would give a general direction to the B.T.C. and the London Transport Executive that concessions to booksellers on railway premises should not be granted in such numbers to any one firm that a monopoly is created.

Mr. Harold Watkinson replied that the present arrangements were considered to give a better service than would otherwise be possible, and he had no evidence that the travelling public was dissatisfied with them. No monopoly in a national sense existed because concessions were let to W. H. Smith & Son, Wymans, and Menzies.

EASTER TRAIN SERVICES.—The Eastern Region of British Railways is running 423 additional main-line trains during the Easter holidays. On Good Friday and Eastern Sunday, as in other Regions, the normal Sunday service is operating with certain adjustments, and, on April 20 and Easter Monday, weekday services with certain modifications, particularly as to the business services, are being run. The London Midland Region is running 1,327 extra trains. The North Eastern Region travel arrangements include running of 223 relief trains and 166 special cheap fare excursions. Some 190 relief trains will run into the Region. In the Southern Region, more than 390 additional main-line trains will be run. Of special interest to ramblers is a "Silver Jubilee" refreshment car train from Waterloo at 9.23 a.m. on Easter Sunday to Dorchester South, Upwey, and Broadway. This special trip will celebrate 25 years of conducted excursion trains for ramblers. In the Western Region, arrangements include the running of more than 330 special long-distance trains. Arrangements have been made for the reopening, for Easter week, of the Vale of Rheidol narrow-gauge railway.

Contracts and Tenders

Clyde Engineering Co., Ltd., of New South Wales, has received from the Commonwealth Railways an order for six diesel-hydraulic 620-b.h.p. shunting locomotives, to have engine, hydraulic transmission, and axle drives of Maybach type.

British Transport Waterways have announced that as part of the £864,000 River Lee improvement scheme a contract has been placed with Leonard Fairclough Limited, Adlington, Lancs., for the construction of a towing path wall, in mass concrete, over a length of 1,500 ft. on the Limehouse Cut which links the Lee with the Thames.

British Railways, Eastern Region, have placed the following contracts:—

Walter Cowen Limited, London, W.14: reinstatement of glazing over circulating area of platforms 1-9 (extension of contract placed on July 13, 1956, for reglazing of roofs over platforms 13-18) at Liverpool Street Station

A. J. Binns Limited, London, N.1: supply and erection of lineside fencing in the Ipswich Engineer's district

Tersons Limited, Finchley, London, N.3: supply and erection of lineside fencing in the Sheffield Engineer's district.

British Railways, North Eastern Region, have placed the following contracts:—

Transport, Engineering & Equipment, Limited, Lancaster: six weighing machines, Thornaby Motive Power Depot

Cawood Wharton & Co., Ltd., Harrogate: flash butt welding plant building, Dinsdale

Tarslag, Limited, Stockton on Tees: supply and erection of Orlit framework, and so on, Thornaby Motive Power Depot

E. Davis (Fixers), Limited, York: fabrication and erection of steelwork, new office accommodation, York

S. H. Heywood & Co., Ltd., Manchester: lighting improvements, Newcastle Central Station

Clifton & Baird, Limited, Johnstone, Scotland: combined rail sawing and drilling machine, Dinsdale.

The Special Register Information Service, Export Services Branch, Board of Trade, reports that a call for tenders has now been issued for work on the extension of section E of the Buenos Ayres underground railway system, from San José station to Plaza de Mayo. The closing date for receipt of tenders is June 6, 1957, and the detailed conditions may be had on payment of the sum of 1,500 pesos at Bmé. Mitre 3345, Buenos Ayres. The reference ESB/4437/57 should be quoted in any correspondence with the Branch (Lacon House, Theobalds Road, W.C.1).

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from India for double wire compensators as follows:—

28 double wire compensators type "C" coupled 92-in. stroke with jockey weights to S.7314 (adv.), alt nil and complete with all parts as listed on the drg. and to IRS drg. No. SA7302 (adv.), alt. nil and to IRS specn. No. S-10-56 and S-15-53 and as specified on part drgs.

14 double wire compensators type "A" coupled 56-in. stroke fitted with jockey weights to S.7314 (adv.), alt nil.

and complete with all parts as listed on the drg. and to IRS drg. No. SA-7304 (adv.), alt. nil IRS specn. No. S-10-56 and S-15-53 and as specified on part drgs.

92 double wire compensators type "A" (single) 56-in. stroke fitted with jockey weights to drg. No. S7314 (adv.), alt. nil, and complete with all parts as listed on the drg. and to IRS drg. No. SA-7304 (adv.), alt. nil, and to IRS specn. No. S-10-56 and S-15-53 and as specified on part drgs.

10 double wire compensators type "B" (single) 72-in. stroke fitted with jockey weights to IRS drg. No. SA7300 (adv.), alt. nil, and complete with all parts as listed on the drg. and to IRS drg. No. SA-7304 (adv.), alt. nil, and to IRS specn. No. S-10-56 and S-15-53 and as specified on part drgs.

The issuing authority is the Director-General of Supplies & Disposals. The tender No. is SRIA/18991-G/V(D). Bids should be sent to the Director-General of Supplies & Disposals, Shahjahan Road, New Delhi. The closing date is April 24, 1957. A set of tender documents excluding drawings is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road, W.C.1). A photo-copy set can be purchased from the Branch for 12s. Cheques and postal orders should be made payable to the Principal Accountant, Board of Trade. Firms wishing to collect photo-copy sets of tender documents are advised to notify the Branch in advance of their requirements. The reference ESB/9394/57 should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from India for a large quantity of mechanical signalling equipment. Full details of the equipment can be obtained from the Branch (Lacon House, Theobalds Road, W.C.1).

The issuing authority is the Director General of Supplies & Disposals. The tender No. is SRIA/18087-G/V/B. Bids should be sent to the Director General of Supplies & Disposals, Shahjahan Road, New Delhi. The closing date is April 23, 1957. A set of tender documents, but not specifications and drawings, is available for loan to United Kingdom firms on application to the Branch. The reference ESB/9007/57 should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from India for cast iron chairs, as follows:—

180 chairs C.I. crossing I in 12 acute, four hole, No. 1 to C.Rly. drg. No. 45741-A (D.G.S. & D.No. 11747)

80 chairs C.I. crossing, I in 12 acute, four hole, No. 3 to C.Rly. drg. No. 45743A. (D.G.S. & D. No. 11748).

The issuing authority is the Director General of Supplies and Disposals. The tender No. is SR2/18336-F(57) IV. Bids should be sent to the Director General of Supplies and Disposals, Shahjahan Road, New Delhi. The closing date is April 24, 1957. A set of tender documents and drawings is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road. W.C.1). The reference ESB/9038/57 should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from India for steel bearing plates as follows:—

9,000 steel bearing plates, special flat 8 in. × 6 in. × ½ in. for 50 lb. "R" FFBSS M.G. turnouts, to IRS drg. No. T1138 or (T1138-1145) alt. 1 and to IRS specn. No. T-10-56 and T-5-34

The issuing authority is the Director General of Supplies & Disposals. The tender No. is SR2/18368-G/IV/A. Bids should be sent to the Director General of Supplies & Disposals, Shahjahan Road, New Delhi. The closing date is April 23, 1957. A set of tender documents, excluding specification and drawing, is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road, W.C.1). A photo-copy set can be purchased from the Branch for 12s. Cheques and postal orders should be made payable to the Principal Accountant, Board of Trade. Firms wishing to collect photo-copy sets of tender documents are advised to notify the Branch in advance of their requirements. The reference ESB/9035/57 should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from India for components for axlebox bearings as follows:—

12,800 guide bushes (cast bronze) (DGS&D No. 10182/2) to I.C.F. drg. No. T-0-1-013 alt. C and to DIN or VSM specn. GB 14 finished machined as per drg. and within the tolerances specified

5,600 guide rings made in phosphor bronze to the I.C.F. drg. No. T-0-1-014 alt. C (DGS&D No. 10163/1) and to specn. B.S.1400 FB1-1 finished machined as per drg. and within the tolerances specified.

The issuing authority is the Director General of Supplies and Disposals. The tender No. is SRIA/16143-H/11. Bids should be sent to the Director General of Supplies and Disposals, Shahjahan Road, New Delhi. The closing date is April 26, 1957. A set of tender documents including drawings is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road, W.C.1). The reference ESB/9395/57 should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from the International Co-operation Administration (I.C.A.) Procurement for India for pig-iron and steel rails as follows:—

650 tons pig-iron, std. high mang. foundry grade IV

2,485 tons steel rails, 60 lb. RBS basic open hearth, medium mang. in 39-ft. lengths with 10 per cent IRS shorts down to 27 ft., rising by 3 ft.

The project implementation order No. is 86-660-99-21-6202. The issuing authority and address to which bids should be sent is the Government of India, Ministry of Heavy Industries, Iron and Steel Control, 33, Netaji Subhas Road, Calcutta-1. This purchase will be financed by the International Co-operation Administration (I.C.A.), the agency through which the United States Government gives economic and technical assistance to under-developed countries. The closing date is April 30, 1957. Copies of specifications and other documents relating to calls for tender under I.C.A. aid can generally be obtained from the India Store Department, Government Building, Bromyard Avenue, Acton, London, W.3. A copy of the specifications and conditions applying to this particular call for tenders may be inspected in Room 728 at the Branch (Lacon House, Theobalds Road, W.C.1). An additional copy is available for loan on application. Photo-copy sets of the documents can be obtained at a cost of 25s. from the Branch. Cheques and postal orders should be made payable to the Principal Accountant, Board of Trade. Firms wishing to collect photo-copy sets of tender documents are advised to notify the Branch in advance of their requirements. The reference ESB/9452/57/ICA should be quoted in any correspondence with the Branch.

The Special Register Information Service, Export Services Branch, Board of Trade, has received a call from India for copper tube plates, as follows:—

5 copper tube plates, flanged for firebox of original boilers, fitted to NH/1, 2 & 3 ND(NG) C.Rly., drg. No. FX(SP) 64, alt. 1, DGS & D No. 8147

2 copper tube plates, flanged for fireboxes of original boilers, fitted to NM(NG), C.Rly., drg. No. FX(SP) 62 alt. 1 (DGS & D No. 8146/1)

2 copper back plates, flanged for fireboxes of original boilers, fitted to NM(NG), C.Rly., No. FX(SP)61 alt. 1 (DGS & D No. 8732)

6 copper tube plates, flanged, inside Firebox, YD class to N.Rly., drg. No. 122A/BR (DGS & D No. 12732)/PIO/D.

The issuing authority is the Director General of Supplies and Disposals. The tender No. is P/SNI/17591-G/151/IV-56. Bids should be sent to the Director General of Supplies and Disposals, Shahjahan Road, New Delhi. The closing date is April 30, 1957. A set of tender documents, including drawings but not specifications, is available for loan to United Kingdom firms on application to the Branch (Lacon House, Theobalds Road, W.C.1). The reference ESB/9037/57 should be quoted in any correspondence with the Branch.

ROAD CASUALTIES IN FEBRUARY.—Casualties on the roads of Great Britain in February increased by 247, or 1¼ per cent, over February, 1956, although the Road Research Laboratory estimates that traffic as a whole was about 13 per cent lower this year. The fine weather in February this year compared with the icy conditions of February, 1956, was probably also largely responsible for an increase in casualties to children who would have been out longer in the open air. There were 2,587 casualties among children, an increase of 428 compared with February of last year.

REDUCED CAR CHARGES TO IRELAND.—To encourage early motoring holidays in Ireland, British Railways have announced considerable reductions in return rates for cars, caravans, and luggage trailers between ports in Great Britain and ports in the Republic of Ireland, during the month of May. The concession return rate for the conveyance of a 15-20 cwt. car between Fishguard and Rosslare will be £12 10s. 5d. and between Holyhead and Dublin £15 14s., a saving of £3 16s. 9d. and £4 18s., respectively. The only stipulation is that cars must be accompanied by not less than two adult saloon passengers, and travel by the same route on both outward and return journeys.

Notes and News

Modifications to "Merchant Navy" Class Locomotives.—Modifications are now being carried out to the Southern Region "Merchant Navy" 4-6-2 locomotives, with a view to improving their performance. Besides the 30 engines of this class now in process of being modified, 15 of the "West Country" class engines will be similarly treated.

T.I.A. Products.—It is announced by ACFI Limited, 121, Queen Victoria Street, London, E.C.4, that agreement has been reached with Barrow Hepburn & Gale Limited, 19, Grange Road, London, S.E.1, whereby that company and its subsidiary, Richard Hodgson & Sons Limited, have taken over the manufacturing and marketing of T.I.A., and other water treatment products.

Costa Rica Railway.—A payment is to be made by Costa Rica Railway on April 24 of 3½ per cent interest on the company's 6½ per cent second debentures. The payment, which is from the profit for the year to June 30, 1956, and is the balance of arrears for the year to June 30, 1942, will be made to holders registered on April 1. The total income for the year ended June 30 rose to £93,767 from £79,431, and, after interest on first mortgage debentures of £42,575 (same), net profits increased to £39,854 (from £26,624).

N.E. Region Poster Featuring York.—The new poster shown in the accompanying illustration is by E. H. Spencer and was produced by Waterlow & Sons Ltd. to the requirements of the Public Relations & Publicity Officer, North Eastern Region. The heraldic borders at left and right depict the shields of the principal historical families connected with the city; most of these shields are in York Minster either in the stained glass of the windows or in the form of carved and coloured wall plaques. The border design includes the White Rose of York. Among the figures of different periods depicted in the upper portion, the Victorian is holding the 2-2-2 locomotive *Jenny Lind*, of the York & North Midland Railway.

Air Fares Increased.—British European Airways has sent to travel agents details of proposed increases in fares on European routes which, subject to Government approval, will be introduced on May 1. Some 30,000 intending passengers who have already booked to travel on or after that date are being informed that the higher rate will be applied to their fares. B.E.A. proposes to increase fares on most European services by 5 per cent.

Threat of French Railway Strike.—A 48-hr. strike was due, as we went to press, to begin earlier this week on the French National Railways, depending on whether the Government would agree to set up a commission on wages. The C.G.T. (General Confederation of Labour) and the Socialist Workers' Force trade unions were also reported to be pressing for a 48-hr. Paris bus and Metro strike on Wednesday and Thursday. The railway strike was demanded by the Catholic Union and by the C.G.T., which called for higher wages. The Socialist Workers' Force railway union has been supporting the strike because it desires a new agreement covering salaries, working hours, reclassification of employments, and paid holidays.

B.R.S. Rate Alterations.—When the cost of fuel and of the fuel tax was increased in December, 1956, a surcharge of 7½ per cent was added by British Road Services to all invoices for general haulage, parcels, and tank haulage. Now that the additional fuel tax has been removed the surcharge has been cancelled. The increased price of fuel remains, B.R.S. point out, and other costs have also risen since December, 1956. Further, claims for increased wages will have to be met. It will be necessary, therefore, to adjust the basic charges to meet the new level of costs in the near future. In the meantime, charges are being raised on a basis 2½ per cent above the level of December, 1956, to provide a partial cover for the increases, other than wages, already incurred. The surcharge of 7½ per cent was removed with effect from April 15, and the 2½ per cent increase applied from the same date.

Electrification from Luxembourg to Strasbourg.—The photographs on page 424 of our April 12 issue were reproduced by courtesy of our French contemporary, *La Vie du Rail;* it is regretted that, in error, acknowledgment was not made in the article.

Buffet Cars in Glasgow-Edinburgh Diesel Trains.—Buffet cars were introduced on the Glasgow-Edinburgh interurban diesel trains on April 15, except for the 7.30 p.m. train from Glasgow Queen Street to Edinburgh Waverley and the 11 p.m. from Waverley to Queen Street. An innovation is the service of afternoon tea throughout the train, trays being brought to passengers by an attendant. The cars were described in our issue of August 3, 1956.

London Transport Easter Arrangements.—Because bus fuel oil has been derationed, London Transport will now be running its full normal programme of extra bus and Green Line services during the Easter holidays. A four-day programme of special road and rail services has been arranged to take holidaymakers to resorts in and outside London. Full-length trains will run on London Transport railways on Good Friday, Saturday, and Easter Monday.

Replacement of Cannon Street Signalbox.—Sir Brian Robertson, Chairman of the British Transport Commission, stated earlier this week that the signal layout at Cannon Street, Southern Region, where, as recorded in last week's issue, the box was destroyed by fire on April 5, "is number one priority job on British Railways today." He had been inspecting the emergency hand signalling. "No time or effort will be spared," he added, "to get this put right. We hope the new box will be ready by Christmas." Early next month a temporary signalling frame will come into operation which will enable Platforms 1 to 5 to be brought into full use and a much improved service to be given. Further improvement will depend upon completion of the permanent box.

Rapid Conveyance of "Queen Mary" Passengers from Plymouth.—Passengers from R.M.S. *Queen Mary* during the recent refusal of dockers to handle that vessel at Southampton were conveyed from Cherbourg on April 2 by ss. *Ivernia* to Plymouth, where they were landed by tender. From Millbay Docks three special trains were run to Paddington. The first, leaving Millbay Docks at 8.30 p.m., arrived Paddington at 12.30 a.m., in 4 hr.; the train, made up of nine Pullmans and five British Railways vehicles, weighed 479 tons and was double-headed by two "Castle" class engines. The second train left at 10.55 p.m., and reached Paddington in 4 hr. 23 min.; it weighed 371 tons and was hauled by a "King" class engine, with a banker to Newton Abbot. The third train left at 12.20 a.m. on April 3, and took 4 hr. 37 min. for the journey. The weight was 423 tons and the locomotive a "Castle," assisted to Newton Abbot. The "Cornish Riviera" express

Poster by E. H. Spencer, produced by the department of the Public Relations & Publicity Officer, North Eastern Region

is allowed, in the current timetable, 4 hr. 10 min. from Plymouth North Road—a shorter distance—to Paddington, non-stop. Because of the short notice in arranging the specials, the three Southern Region boat trains were used which would normally have run from Southampton, so avoiding disturbance to seat reservations and meal arrangements.

London Midland Region Arts and Crafts Exhibition.—This year's Arts and Crafts Exhibition by British Railways, London Midland Region, staff was held at Ancoats Old Hall from April 1 to 8 and attracted 285 entries from the staff from all parts of the Region. In previous years the Exhibition has been held at Euston. In addition to paintings, sketches and photographs, other displays of work included sculpture, toys, models, needlework and wood and metal work.

Steel Production in March.—Steel production last month was at the rate of 431,000 tons a week. Some 20,000 tons of output were lost in the last week of the month because a strike of engineering workers affected steel production in certain areas, particularly in the Lancashire and Sheffield districts. Pig-iron output, at the rate of 277,200 tons a week, was higher than in any previous month. In February, the previous best month, the rate was 267,600 tons a week and in March a year ago 262,000 tons a week.

United Steel Cos. Ltd. Colour Film.—"Steel Rhythm," an Eastmancolor film produced by Wallace Productions Limited, depicts in some 35 min. the activities at Rotherham of the Steel, Peech & Tozer Branch of the United Steel Cos. Ltd. Amongst many items of the steelworks featured are the melting shop, cogging and rolling, forging, and railway wheel and tyre pressing, also the uses of the high-grade and alloyed steel made in the works. There are a number of striking shots of the various processes. The commentary is both succinct and informative. The film, which was shown recently in London at a private viewing, is obtainable on free loan in 16 mm. and 35 mm. from the Public Relations Officer, the United Steel Cos. Ltd., 17, Westbourne Road, Sheffield, 10.

London Transport Cheap Summer Fares.—The London Transport summer programme of special fares is to be brought into operation on Easter Sunday, a month earlier than in 1956. Among special facilities are "anywhere for a bob" maximum single fares on any one central bus or trolleybus, available on Sunday mornings for a single journey started before 1 p.m., and 5s. "Go-anywhere-you-like" tickets, giving one day's unlimited travel over 1,400 miles of green Country Bus routes, available any day of the week. There are cheap Sunday returns from a number of Metropolitan stations to places in the Chilterns and from a number of Central and District line stations to Epping Forest. Through excursion and cheap day tickets are issued from Underground stations to Brighton any day except Saturday, and to Southend every day.

Devon General Omnibus Results.—At the annual meeting of the Devon General Omnibus & Touring Co. Ltd. on March 29, Mr. W. T. James, the Chairman, stated that receipts for the year ended December 31, 1956, were the highest on record. Costs, however, were also at a record level and it was necessary to apply, in November, to the Traffic Commissioners for increases in fares to cover higher wages and the shortfall in additional receipts expected from earlier increases. This application was granted. A poor year for visitors and increased use of private motorcars resulted in a fall of some 2,500,000 in passengers carried. Total mileage fell by 130,000. Joint rail/road excursions were operated during the summer and bus services were provided on occasions at short notice to overcome rail emergencies. The company also provided road feeder services for rail excursions.

New Ferry Vessel on Skye Service.—The car and passenger ferry vessel built by the Ailsa Shipbuilding Co. Ltd., Troon, for the Kyle of Lochalsh—Kyleakin ferry crossing went into service on April 12. The new vessel, named *Lochalsh*, carries 100 passengers and six cars. It is approximately 80 ft. long overall and 21 ft. 6 in. beam, and has a manually operated turntable for vehicular traffic. Propelling machinery consists of two Gleniffer DH4 engines. The speed is 9 knots.

Crompton & Sons Ltd. New Works at Haydock.—The formal opening of an additional factory centre of Thomas Crompton & Sons Ltd., to be known as the Derby Works, took place on April 12. The company, stated to be the largest manufacturers of hinges in the British Commonwealth, is interested in the export trade, more than 1,600 tons of hinges and hinge blanks and parts having been exported during 1956, totalling nearly £400,000. Products for locomotive engineering include hinges for fallplates, toolboxes, tank lids, railway wagons and rolling stock. When fully operative the factory is expected to employ about 250 staff and cover 44,000 sq. ft. The production bays are roofed in northern light pattern. Below is a covering of aluminium decking protected by bitumen-coated insulation board and three layers of felt. All the buildings are steel-framed and brick built. The administrative block, occupying the south side of the main production bay, has an exterior face of art-stone and cells.

Metal Advertising Hoardings.—Two experimental all-metal double-sided commercial advertising structures have been erected at Hayes Station, Southern Region. The hoardings have been produced by Mead McLean & Co. Ltd., to the requirements of the Public Relations and Publicity Officer, Southern Region.

Birmingham Railway Carriage & Wagon Co. Ltd.—Trading profits of the Birmingham Railway Carriage & Wagon Co. Ltd. for 1956, advanced to £102,258 (from £78,698 for 1955), but after charging £46,784 (£12,123) for tax, net profits declined to £55,692 (from £61,355). The ordinary dividend is again 10 per cent, absorbing £56,981. Profits tax on dividends required £27,706 (£20,740).

British Railways Drama Competition.—The Southern Region won the British Railways Inter-Regional Drama Competition, sponsored by the British Railways Staff Association and held in St. Pancras Town Hall, London, N.W., on April 6; the team was the Southern Region Players, of London, and the play "The Gentle Rain," by Anthony Booth. The Scottish Region was the runner-up, the team being the Springburn Park Drama Group, of Glasgow, and the play "The Failure," by Joe Corrie. Lady Robertson, wife of Sir Brian Robertson, Chairman of the British Transport Commission, presented a challenge shield to the winning team. The adjudicator was Mr. E. Martin-Browne, a founder member of the Guild of Dramatic Adjudicators and Director of the British Drama League.

R.H.A. Discusses Rates.—As a result of confirmation by the Road Haulage Wages Council on April 10 of increases ranging from 7s. to 16s. in the basic wages of road haulage employees, the Road Haulage Association announced that a meeting of its National Rates Committee would be held on April 17. The Committee was to consider the effect on road haulage rates of the increase in wages and other costs and to review the surcharge of 10 per cent agreed last December following the announcement by the Chancellor of the Exchequer of increases in the cost of liquid fuel. These included the extra 1s. a gallon on the fuel tax which has now been removed. Members of the Association have been advised to continue present rates pending a decision of the Rates Committee, which is expected to be retrospective in dealing with the surcharge. The wage increase is subject to the approval of the Minister of Labour and the date of operation will be announced if and when the Minister makes an Order.

Experimental all-metal advertising structure at Hayes, Southern Region

OFFICIAL NOTICES

YOUNG ENGINEER, capable of setting-out, required by firm of Railway Constructional Engineers. Drawing office experience an advantage. Railway experience not essential. Excellent opportunity for young man interested in this branch of Engineering. Write full particulars, Box No. 321, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

VACANCIES exist at Chippenham, Wiltshire, for DRAUGHTSMEN or DRAUGHTSWOMEN, experienced in the preparation, from clients' plans, of illuminated railway track diagrams. Interesting work in connection with large railway modernisation schemes. 5-day week. Contributory Pension Scheme. Write, giving details of past experience, to Personnel Superintendent, Westinghouse Brake & Signal Co. Ltd., Chippenham, Wilts., quoting Ref. No. DO/N/H.

POWER SIGNAL LINESMAN required by East African Railways and Harbour Administration, Civil Engineering Department, on contract for one tour of 36/48 months in first instance, with prospect of permanency. Consolidated salary £1,148 a year. Outfit allowance £30. Gratuity at rate of 10 per cent consolidated salary drawn during contract. Free passages. Liberal leave on full salary. Candidates must be experienced in all aspects of power signalling, and should have knowledge of Block & Telecommunications signalling, mechanical signalling and interlocking. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2B/42081/RA.

WORKING FOREMAN (CARRIAGE AND WAGON MAINTENANCE) required by East African Railways and Harbours Administration for one tour of 36-45 months, with prospect of permanency. Salary scale (including inducement pay) £863, rising to £968 a year. Commencing salary according to age. Free passages. Free quarters or an allowance in lieu. Candidates, between 25 and 35, must have served an apprenticeship to Carriage and Wagon Fitting, and have had subsequent experience of Carriage and/or Wagon Repair and Maintenance with British Railways or a firm of Railway Carriage and Wagon Builders. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2B/41618/RA.

PERMANENT WAY INSPECTOR required by Sierra Leone Government Railway on contract for two tours of 18 to 24 months in first instance. Salary scale (including expatriation pay) £859, rising to £1,266 a year. Gratuity at rate of £100/£150 a year. Commencing salary according to age and experience. Outfit allowance £60. Free passages for officer and wife. Free passages for two children under age 19 or grant up to £150 annually for maintenance in U.K. Liberal leave on full salary. Candidates must be fully trained and competent platelayers, with at least 5 years' experience in charge of labour, and be capable of making concise reports and returns. Membership of Permanent Way Institute an advantage. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2B/42273/RA.

PORT OF LONDON AUTHORITY invite applications for the position of SENIOR RAILWAY TRAFFIC OFFICER, with a prospect of promotion, in 18 months time to Railway Superintendent, to supervise the working of the Authority's Railways. Commencing salary £1,075 by two annual increments to £1,155 per annum, inclusive. Applicants, who should preferably be not less than 40 or more than 50 years of age, must have had practical experience in handling railway traffic and staff under Dock conditions. The successful candidate will be required to become a Member of the Port of London Authority's contributory superannuation scheme. Applications, in an envelope marked "Senior Railway Traffic Officer," stating age, full details of qualifications and experience, should be sent to the Establishment Officer, Port of London Authority, Trinity Square, London, E.C.3, not later than April 30, 1957.

ASSISTANT ENGINEER (MECHANICAL) required for their London office by the Crown Agents for Oversea Governments and Administrations for appointment normally to pensionable establishment on probation for two years. Salary scale £765 x £25—£840 x £30—£990 x £40—£1,190 a year. The £765 minimum is linked to entry at age 25 and is subject to increase at rate of one increment for each year above that age up to 34. Fully qualified officers at least 27 years old may be eligible for special increase of £75 after two years' service. Prospect of promotion. Candidates should have passed qualifying examination A.M.I.Mech.E. or equivalent examination. They should have served apprenticeship or pupilage in the rolling stock department of British Railways or with carriage and wagon builders or a firm specialising in manufacture wharf or railway breakdown cranes. They should also have subsequent drawing office experience in design of carriages and wagons, diesel railcars or cranes, together with a sound knowledge of modern workshop practice. Duties include preparation of contract specifications, examination and approval of drawings, design calculations, and technical correspondence. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience, and quote M2A/40807/RA.

FOR DISPOSAL.—Approx. 3 miles of STANDARD GAUGE RAILWAY TRACK, in good condition, and comprising of B.S. 95 lbs. section B.H. Rails, in chiefly 60-ft. lengths; S.1 Type Chaired Sleepers and Turnouts and Crossings, etc. The track is lying in North Wales, and inspection can be arranged by appointment. Contact Eagre Construction Co. Ltd., Scunthorpe. Tel. 4513/7.

SALE OF RAILWAY MATERIAL.—200 Tons Serviceable 95-lb. B.H. RAILS, in 60 ft. lengths. 2,200 No. Relayable S.1 TYPE CHAIRED SLEEPERS. 1,000 No. Relayable PLAIN SLEEPERS. Relayable CROSSING TIMBERS. Serviceable TURNOUTS, FASTENINGS, etc., to suit. Delivery Ex Stock. Eagre Construction Co. Ltd., East Common Lane, Scunthorpe. Tel. 4513/7.

Forthcoming Meetings

Open currently and until further notice.—British Transport Commission: Historical Exhibition "Transport Treasures" in Shareholders' Meeting Room, Euston Station, from 10 a.m. to 6 p.m. on weekdays, and 2 to 6 p.m. on Sundays. Admission 6d.

April 26 (*Fri.*).—Institution of Railway Signal Engineers, Bristol Section, in the Meeting Room, Temple Meads Station, Bristol, at 5.30 p.m. Paper on "Axle counters," by Mr. H. A. Cod (Tyer & Co. Ltd.).

April 26 (*Fri.*).—Railway Correspondence & Travel Society, West Riding Branch, at the Talbot Hotel, Bradford, 7.30 p.m. "The North Eastern Railway, past and present," by Mr. T. E. Rounthwaite.

April 27 (*Sat.*).—Railway Correspondence & Travel Society, Lancs and North-West Branch, at All Saints' Rectory, Droylsden Road, Newton Heath, Manchester, 10, at 6.30 p.m. Paper on "Some railway byways of North Somerset," by Mr. W. R. Dyer.

April 27 (*Sat.*).—Railway Correspondence & Travel Society, Sussex and Kent Branch, at the Railway Hotel, Brighton, at 7 p.m. Paper on "The main line services of the L.B.S.C.R., by Mr. O. J. Morris.

April 27 (*Sat.*).—Railway Correspondence & Travel Society, South of England Branch, at the Y.M.C.A. Library, Friar Street, Reading, at 6.30 p.m. Paper on "Distribution of rolling stock," by Mr. A. N. Legg, of the Rolling Stock Section, Chief Operating Superintendent's Office, Western Region, Paddington Station.

April 30 (*Tue.*).—Railway Correspondence & Travel Society, East Midland Branch, at Nottingham at 7.30 p.m. Paper on "From Webb compound to Claughton," by Mr. J. F. Clay.

April 30 (*Tue.*).—Institute of Transport, at the Connaught Rooms, Great Queen Street, London, W.C.2, at 12.30 for 1 p.m. Informal luncheon. Principal guest: Mr. Gerard d'Erlanger, Chairman of B.O.A.C.

May 3 (*Fri.*).—The Railway Club, at 57, Fetter Lane, London, E.C.4, at 7 p.m. Paper on "The beginnings of the London & Southampton Railway," by Mr. K. G. Carr.

May 4 (*Sat.*).—Permanent Way Institution, London Section. Joint visit to Edinburgh and district with Edinburgh Section members.

May 6 (*Mon.*).—"Historical Model Railway Society, at the Headquarters of the Stephenson Locomotive Society, 32, Russell Road, London, W.14, at 7 p.m. Paper on "The Greenwich branch of the S.E.R.," by Mr. O. J. Morris.

Railway Stock Market

There has been increased activity in stock markets since the Budget and an advance in industrial shares on a wide front, though in contrast, British Funds receded in price because the Chancellor's remarks have tended to discourage hopes of another reduction in the bank rate in the near future. The rise in industrial shares has been inspired by estimates of the benefits that will be derived from the tax concession granted to companies in respect of earnings from overseas assets. The Finance Bill will have to be awaited before the final position can be clearly assessed.

Meanwhile hopes that the company stands to benefit from the tax concession in respect of earnings from overseas have been responsible for a strong advance in Antofagasta ordinary stock to 33, which compares with 30½ a week ago. Moreover, Antofagasta preference stock has also risen on balance from 44½ to 46½.

United of Havana second income stock remained at 8 and the consolidated stock at 2¼. San Paulo 3s. units changed hands around 3s. 1½d., Mexican Central "A" bearer debentures were 71½. Guayaquil & Quito assented bonds have been dealt in at 76½, Paraguay Central prior debentures at 12 and Chilean Northern debentures at 44. Costa Rica ordinary stock again transferred actively around 25, and business up to 16 was recorded in United of Yucatan bonds.

In other directions Nyasaland Railways shares were again 12s. 9d. Midland of Western Australia stock marked 7 and the second debenture 15.

Canadian Pacifics, which continued in demand, have risen further from $66¾ to $67¼: the 4 per cent debentures eased fractionally at £71, while the preference stock was maintained at £58. White Pass shares were $21¼, compared with $22 a week ago. Peru Transport "B" were $1¼.

Engineering shares displayed less activity than most groups of industrials, but have been generally well maintained. Vickers at 45s. were virtually the same as a week ago, and Cammell Laird 5s. shares kept at 12s.

A welcome feature was an advance in Clarke Chapman from 158s. 1½d. to the new high level of 160s. Further consideration of the financial results helped British Aluminium at 70s. xd. British Oxygen were active around 36s. Ruston & Hornsby at 32s. 6d. and Tube Investments at 65s. 9d. have not held best prices, but Birmid Industries advanced strongly to 71s. 6d.

Beyer, Peacock (43s. 9d.) were within 3d. of the level a week ago, G. D. Peters held at 30s. 7½d. and Charles Roberts 5s. shares at 11s. 4½d. while Westinghouse Brake strengthened to 84s. on the news that the rights issue is to be made to shareholders at 35s. per share. At Glasgow, Hurst Nelson strengthened from 36s. to 36s. 6d. North British Locomotive were good, having advanced to 15s. 3d. compared with 12s. 6d. a week ago, but Birmingham Wagon eased to 19s. xd. Gloucester Wagon 10s. shares were maintained at 14s. and Wagon Repairs 5s. shares also again showed business around 14s. Brush Group 5s. shares continued active because of the take-over talk, and strengthened further from 6s. 1½d. to 6s. 4½d. T. W. Ward remained active and rose further from 74s. 9d. to 76s. 3d. a new high record level, but following publication of the results, B. I. Cables receded from 53s. 9d. to 51s. 9d.